The Plough, the Loom, and the Anvil.

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DISCOURSE ON THE WANTS OF AGRICULTURE,

Delivered before the Middlesex (Connecticut) Agricultural Society, at their Annual Meeting, on the 7th of October, 1848, by J. S. SKINNER, Senior Editor of "The Plough, the Loom, and the Anvil."

I HAVE accepted the invitation with which you, my friends, have honored me, to come among you on this occasion of your annual exhibition, but not to talk about practical agriculture. There is little that I could teach you. A southern man, in his visits to the north, sees much to admire, and much that he might desire to imitate. He may learn much, but he finds that he has little to give in return. You are everywhere endeavoring to provide for yourselves the best of teachers, in agriculture and in all else, in bringing the consumer to take his place by the side of the producer, and thus giving to the latter the widely pervading and permanent stimulus afforded by ready markets and good prices, and these do more for the promotion of agriculture in a single year, than premiums and other hot-bed influences alone could do in a century. You are endeavoring to provide a market on the land for all the products of the land, thereby to enable your farmers, at small cost of time or labor, to exchange their potatoes, their turnips, their cabbages, and their fruit, with the makers of ploughs and axes, the manufacturers of cloth and of carpets, carrying back the refuse of their products to enrich their land and themselves, thus to acquire the command of time and means for the improvement of their machinery and their minds. To that is due the fine exhibition of both men and things that I have lately witnessed, with a gratification that could scarcely have been increased, except, perhaps, by my having had with me some of my southern friends, who have yet to learn the advantage that is to be derived from bringing the loom and the anvil to take their places by the side of the plough. Among them, too, agricultural societies abound, yet agriculture does not flourish, and therefore it is that men are seen flying, as if from pestilence, from lands abounding in marl and lime, from meadows undrained, from river bottoms uncleared, and from soils so rich as to be covered with timber of growth so luxuriant that the cost of destroying it is more than the land would be worth when cleared, to seek in the west new and poor soils upon which again to begin the work of cultivation, and there to repeat the work of exhaustion—and all because they have yet to learn that the loom and the anvil are the most efficient aids to the labors of the plough.

Agricultural societies abound throughout the Union, but with their increase production diminishes. Fifty years since, the average yield of wheat in New York was twenty bushels. It is now but twelve. Twenty years since, that of Ohio was twenty bushels. It is now not over ten or twelve, and it diminishes with each successive year. The reason for this is, that these societies began at the wrong end, and so do they still continue. They offer premiums for single cauliflowers, and dozens of cabbages—for pecks of peaches and apples—and for bushels of wheat and corn—when they

should be offering premiums to induce those who are themselves the dispensers of the great premium offered by the presence and all-pervading influence of ready markets and prompt pay for all the produce of the farm, the eggs, the milk and cream, the butter, veal and mutton, peaches and apples, strawberries and raspberries—premiums to induce active and industrious shoemakers and tailors, carpenters and bricklayers, blacksmiths and machinists, spinners and weavers, to come, or to remain, among them, setting themselves down by the side of their ploughs, and thus enabling them to produce tons of turnips and potatoes from the same land, and with the same labor that yield now but hundred-weights of wheat or cotton. Instead of premiums on production, they want premiums on consumption; for where consumers abound the farmers grow rich and skilful, and machinery improves, and production increases, because the labor required for the process of exchanging is diminished, and that applied to production is increased in proportion, and because the refuse of the products, instead of being wasted on the road or in distant markets, goes back upon the land, which improves instead of deteriorating, and becomes more valuable with every increase in the quantity that is taken from it.

Throughout a large portion of the Union, the product of the land dimi nishes, because our societies have thought too much of the practice, and too little of the politics of agriculture. We see, occasionally, a disposition for the cultivation of this more elevated science, but rarely, as I think, do we see a manifestation of much knowledge of the real wants of agriculture. Of all our societies there is none that enjoys so much government patronage as does that of New York, in whose ponderous volume of Transactions, recently issued from the press, the most conspicuous place is assigned to the Address of the late Governor Wright; a man occupying, and most deservedly, a high place in his country's esteem, and distinguished as a politician, but not, as I think, a master of the science he has undertaken to teach in that address—*the politics of agriculture.* It may appear, perhaps, presumptuous in me thus to speak of such a man; but it is precisely because of his prominent position that I select his views for comment. Small men may make mistakes and do small harm, but when great men do so, they do great harm; for error so endorsed and so widely disseminated under such auspices, passes for truth, and is, by the agency of the press and the public patronage, propagated throughout the land, to be echoed back again from north and south, and east and west, until at length what was at first but the error of an individual, becomes the error of a party, capable of influencing the action of a nation, to the serious injury of the interest that it was honestly designed to serve, one in relation to which I feel that I have a right to express some concern, after dedicating to its advancement the best portion of my life.

In this "address" we are told that "our agriculture is in its infancy almost everywhere, and at its maturity nowhere." That such is the case is obvious to all. What we desire to know, and what we look to find in this address, is the cause of this *extraordinary backwardness* in the great pursuit of man, compared with his extraordinary progress in the mere work of fashioning its products; but that we are not told. The speaker does not even seem to have asked himself the question, and yet it lies at the bottom of all useful inquiry into the condition of agriculture, and is therefore certainly one deserving most serious reflection. Had he entered on the inquiry, he must have been struck with the fact that after two centuries of practice, our machinery of production is yet so exceedingly imperfect that it may with justice be said to be almost in earliest infancy, and that in a country which boasts so loudly, and so justly too, of its superiority in the machinery of conversion and exchange. Behold what steam, the great

discovery of the age, is doing for all other pursuits compared with any direct application which has been made of that great power to agriculture. The orator's own state possesses perhaps the best mills in the world for the conversion of wheat into flour, and yet her yield of wheat has fallen to a dozen bushels to the acre, while a careful writer, before the Revolution, stated that from twenty to thirty bushels was the common crop in the county of Albany, and her people are abandoning the immediate vicinity of those fine mills, to seek in the west new lands at a distance from any mills. Her great port possesses the best machinery in the world for the transportation of corn to feed the famishing people of Ireland, but her machinery for the production of corn is so inferior that its yield is but twenty-five bushels to the acre, while fifty years ago it was proved that one acre could be made, in the same state, to yield one hundred and twenty bushels. She has close at hand the best machinery in the world for the conversion of wool into cloth, and yet at brief intervals her farmers cut the throats of their sheep, and thus exterminate flocks whose collection has been the labor of years. The nation possesses the best machinery in the world for the conversion of cotton into cloth, and yet throughout the south men cultivate acres that yield but two hundred pounds, when, under a proper system of cultivation, they might have in return to the same labor quintuple the quantity. Everywhere we see that agriculture *is* in its earliest infancy, and almost everywhere we see that it goes rather backward than forward, notwithstanding the numerous societies and journals engaged in disseminating information in regard to improved instruments, and improved modes of practice, and it would have been a task worthy of the intellect of Governor Wright, to search into and explain the *causes of this extraordinary fact.* Had he done so, he might have found the explanation in another fact referred to by himself, that while in the older states there is not a single county that has not land that is yet to be brought into cultivation, we are constantly engaged in expelling our people to form new states in the west, which are growing, therefore, with a rapidity that almost surpasses belief. In the midst of all this, hear a late and enlightened Governor of South Carolina declare, "We have extensive swamps and countless ponds in our country, most of them vastly rich. Instead of requiring manure, these swamps could furnish a large amount of peat and mud for our poorer land, and retain afterwards a thickness of vegetable matter which ages of proper culture could not extract. They are equal, large portions of them, to the best lands of Louisiana and Texas, and their yield, on the *second* year's cultivation, would repay all the labor of draining and clearing."

Yes, my friends, it is to this fact that is due the slow progress of cultivation and its almost universal slovenly character. When men are running away from each other, production diminishes, and agriculture cannot improve; and the reason why it cannot do so is, that until population attains a certain density, and men are thereby enabled to combine their exertions, the richest soils cannot be cultivated. Look around, I pray you, and see what were the lands upon which your forefathers commenced. Were they those which bore the largest trees—those which, from the richness of the soil, were most fitted to hold water—and which occasional inundation had enriched by ages of alluvial deposits—and those therefore which required the most clearing and drainage? Certainly not! To have done so would have ruined them. They commenced upon poor soils; upon those which bore few trees and drained themselves; and it is only as wealth and population have grown, that the richer ones have come into activity. So has it been everywhere, and so is it now in every state of the Union, even in those new ones to which your people are flying in search of rich soils, to be obtained, as they suppose,

without labor. So must it everywhere be, for rich soils will not pay the cost of clearing until the consumer is at hand to drink the milk and eat the veal, the potatoes, the turnips, and the other commodities of which the earth yields largely, and which will not, therefore, bear the cost of transportation. First settlers have neither the means nor the inducement to begin on the richest soils, encumbered with wood or saturated with water. Look, I pray you, to Virginia and South Carolina. In both, the work of cultivation was commenced upon poor soils, which have been exhausted by the production of the wheat, and the tobacco, and the cotton required for foreign markets, and the owners of those lands are now flying from the vicinity of beds of marl, and from river bottoms abounding with manure, and covered with timber that should be employed in the construction of houses, and the making of railroads, for the hundreds of thousands of prosperous mechanics that might now be occupying those States, making a market on the land for the products of the land, and enabling the planter to obtain tons of potatoes and turnips, where now he has but hundred-weights of cotton; but, unhappily both have yet to learn that the plough and the harrow cannot prosper at a distance from the loom and the anvil. "Population makes the food come from the rich soils, and depopulation drives men back to the poor ones." Here, my friends, is the great truth that lies at the bottom of sound agricultural politics. It is not in accordance with the doctrines of the day, which teach that increasing population must be accompanied with increasing tendency to starvation and misery, and that war and waste are "blessings in disguise," because they tend to restrain population within the limits of subsistence, but it *is* in accordance with every day's experience in New England and in every country that remains at peace, and permits wealth and population to grow together.

Our agriculture *is* in its infancy, and it is so because our people are everywhere increasing their distances from each other. Why they should desire so to do, appears to have claimed the attention of Governor Wright, and thus we find him attributing it to a "strong and resistless inclination of our people," leading them to agriculture in preference to any other pursuit. Here his inquiries appear to have stopped. Had he gone one step farther, endeavoring to ascertain the cause of the existence of this supposed "inclination," he might have found that *necessity*, and not the inclination itself, or the power to indulge it, lay at the bottom, and was the true cause of the extraordinary facts presented to view throughout this country. Man always courts society. He never flies from the neighborhood of his fellow-man to gratify inclination. He knows that "two can lift a log that one can neither roll nor lift," and yet he is everywhere throughout the country seen flying from parents and friends, from the home of his youth, with its school-house and its church, and from every thing that has contributed to make life pleasant, and all, according to Governor Wright, because of a "resistless inclination" for agriculture, that has, as I believe, no existence. Look around you, my friends, and see how strong is the tendency towards the mechanic arts. Nine-tenths of your young men and women would prefer the town and its pursuits to the country; and they do so because they like to congregate. Such being the case, there can be few, who, from choice, go west, there to begin the work of cultivation. I doubt if any would, had they the power to choose between good wages in a factory, with employment for their children, and with a little lot at hand upon which to bestow the spare hours and half-hours not otherwise employed, and that lot having in its immediate neighborhood the old school-house, affording means for educating the children, and the old church, and the old clergyman, and the old graveyard, hallowed as the place where repose the remains of parents and friends.

And I hold it to be the natural right of the people of every country—one which every country would enjoy under just and wise legislation—to carry all its natural products up through all the various processes of preparation for actual use, and to which labor can be profitably applied, until the raw material is made ready for consumption by the last touch of industry; and that any course of policy, which interferes with such application of the labor of a country to the fashioning of its own productions, is worthy to be regarded as the pernicious "invention" of mere politicians—an invention which disturbs, without any equivalent advantage, the natural course of industry, diminishes the ratio of profitable consumers to producers, and so far affects injuriously the natural and political rights of the cultivators of the soil. For such disturbing and mischievous interference, statesmen, or politicians claiming to be so called, have alleged the want of appropriate labor in our own country, and especially in the South; but such is not generally the fact, and where it is so the effect is confounded with the cause: for where absence of labor exists, it may be traced directly to political causes, which deprive labor of a living and reasonable reward. But let the legislator cut off our colonial dependence on the pauper labor of Europe—let him say to industry and capital, seeking fair employment, go into the vast coal fields of Pennsylvania and of Maryland, and there open your mines—into Virginia where coaland ore abound, and build your furnaces—into the Carolinas and Georgia, where water-power beyond measure exists in the midst of the finest sheep pastures in the world, and there build your factories; and there will be no want of labor to heave the coal, or to smelt the ore, or to weave the wool which there might be grown, almost as the leaves grow on their ever-green trees, through winter and summer, without labor and without expense. Let the lawgiver but hold out profitable employment, and industry will soon flow in from all quarters, as when the proper soil is provided mushrooms spring up by thousands in a night where none were ever seen before. Thus on inquiry have I been lately informed by manfacturers in the heretofore most thinly settled parts of Maryland, and in almost abandoned Alexandria, that on putting up their factories, the redundant or poorly paid labor of agricultural and mechanical pursuits, and labor altogether unsuited by its feebleness to such employments, flocked in to their establishment for present living, and more certain reward, just as water is everywhere seen to seek its level—becoming in these factories active bees instead of drones in the great hive of human industry, and profitable consumers instead of producers of the fruits of the plough.

When the last touch of the industry of our own countrymen has been given to the products of our own country, and the articles thus manufactured are found to transcend their wants, then, and not till then, should commerce be invited to come and perform her appropriate and beneficent offices in the work of exchange of the fruits of the earth and the fruits of the mind, between different regions of the earth, fetching and carrying only such commodities as the laws of climate, and other natural influences, may have adapted to the one and forbidden to the other. Such in my judgment are the true principles of agricultural economy; principles which I truly and gratefully admit have been in a great measure imbibed from the recent work of Mr. Carey, "THE PAST, THE PRESENT, AND THE FUTURE," a work in my estimation better fitted than any which has appeared in our language to explain, and in the clearest and simplest way, the natural and true doctrines of social and political economy, and particularly as they lie at the foundation and affect the progress of *agricultural* improvement. But after all the natural, and the most profitable pursuit of man is agriculture, and his inclination for it would be far stronger than it is now, could it be indulged

without the necessity for separating himself from parents and friends, and society at large, and, above all, from the lovely daughters in companionship, with whom he has grown up to manhood, as he is now forced to do. And why should this separation be required? In every county of every one of the older states there is abundant land unoccupied, or but half occupied, and men are everywhere seen cultivating large farms that would yield to each of half a dozen men, owners of the small farms into which they could be divided, more than is now obtained from the whole; and that division would take place could each county have its mill, or its furnace and its forge, as a place of exchange for labor, and food, and other raw materials, much of which is now wasted. In the old settled parts of Virginia lands may be bought for two, three, and four dollars an acre, alongside of tracts which skilful and industrious management has made to yield from twenty-five to thirty bushels of wheat to the acre. It is neither scarcity of land that drives, nor "inclination" that seduces men to go west. Every man and woman born in your state would prefer to live and die in it could he gratify that "inclination" which is really the "resistless" one, and which prompts him to desire improvement of his condition, to be attained either by the work of cultivating the earth, or that of fashioning its products, and when they flee from among you to seek the West, it is because of the existence of a necessity for doing that which they would prefer not to do, and because of the absence of power to determine for themselves their course in life.

To what cause are we to attribute this absence of power? That question may, I think, readily be answered without travelling beyond the limits of this "Address," in which we are told, that notwithstanding the great demand produced by famine in Europe, "the avenues of commerce" are still "filled with the productions of American agriculture." Such we know to be the case. There is a perpetual surplus of corn, and tobacco, and wheat, and cotton, and all other of the products of the field. That surplus is always seeking a market, and the farmer of the old states is borne down by its weight as it passes over him. It is sold at low prices, yielding little to the producer while destroying the man with whom it comes in competition; and the latter then goes west to seek the fabled land of plenty—that which yields the corn that *can* be sold so low—there to add to the supply of food with which to overwhelm those he left behind, and compel them in their turn to follow his example. *Necessity* drives him west, and every man thus driven helps to drive others in the same direction. To that, and that alone, may we attribute the "irresistible inclination" to agriculture that has scattered twenty millions of people over a million of square miles, commencing everywhere with the poorer soils, while surrounded by rich lands undrained and uncleared, and compelled to make and maintain tens, if not hundreds, of thousands of miles of unnecessary roads, on which and in distant markets they waste the manure yielded by their products, everywhere exhausting their lands and keeping themselves poor when they might have grown rich, could they have followed their *real "inclination," and staid at home!*

That such is now the case must be obvious to all of you, my friends, and equally so must it be that the continuance of the existing system tends to the depopulation of the older states. Will it continue? That it will do so we are assured in this "Address," which a State society has felt called upon to distribute so widely, and in which we are told that it is impossible to see "a limit to the period" when we shall not "present in the commercial markets of the world large surpluses of all the varieties of breadstuffs, beef, pork, cheese, cotton, tobacco, &c.;" and, if that must continue

to be the case, agriculture cannot improve. The same causes that have, in time past, compelled men to fly from each other must continue so to do for a time, beyond which we cannot "see a limit;" and, while such shall be the case, men must continue to scratch poor soils when they might have rich ones could they live in connection with each other, and, while they shall thus continue to disperse themselves, agriculture must continue in its "earliest infancy."

What is the remedy? What shall be the remedy, when our "almost boundless agricultural field" shall come to be squatted over by men who are exhausting the powers of the earth, and wasting labor and manure on the road in search of markets for this vast surplus? What is to prevent Virginia and South Carolina from being utterly abandoned, as the culture of tobacco, and cotton, and wheat, is more and more transferred to the new states of the West? "We have no hope," says Governor Hammond, of South Carolina, "of discovering a new staple which shall be necessary to the existence or comfort of mankind, the cultivation of which we can monopolize long enough to restore our fortunes." They cannot continue to raise them on this already exhausted land, and they have no market for potatoes, or turnips, or Indian corn, or cabbages, to enable them to clear and drain the rich ones. If we seek in this "Address" for a remedy for this extraordinary state of affairs, we shall find none. We are there told that "our farmers must surrender the idea" of a market on the land for the products of the land, "and must prepare themselves to meet the competition of the commercial world in the markets of the commercial world, in the sale of the fruits of their labor." It has been in pursuance of the doctrine here inculcated and acted upon, by men high in name, in influence and authority, to prepare ourselves to meet the competition of the commercial world in the markets of the world, that several of the most fertile counties of my native state have diminished in population more than ten per cent. within the last ten years.

And who are the people with whom our farmers are thus invited to compete? Are they those of the more civilized portions of Europe? Of England, or of Belgium? They have no grain to sell. They have taken care to make a market on the land for the products of the land, and therefore it is that they are civilized, for civilization is the companion of growing wealth and population. Is it not with the least civilized—the miserable people of Poland—the ignorant serfs of Russia—the wretched fellahs of Egypt—the impoverished people of Sicily—that we are invited to compete? It is. They have made no market on the land for the products of the land, and therefore it is that they waste their labor in carrying their products to "the markets of the commercial world," losing on the road and in those markets the manure, exhausting their land and themselves, and cultivating poor soils for want of means to clear and drain rich ones. Had Governor Wright been talking to his son, he would have given him different advice. He would have told him to enter into competition with those above, and not with those below him; but, in talking to the nation, he advises competition with, and thinks we may prevail against, the most degraded and ignorant people of the world, and not with the most civilized. Such competition is easy. Let us shut up our mills, our coal mines, our furnaces, and our machine shops, and we shall be prepared on the instant. Food will then be cheap enough to supplant the corn of the Black sea and of the Vistula, cotton will be cheap enough to drive the Hindoo out of market, and the sheep-grower of Michigan and Vermont will starve out the bush-ranger of Australia. Nothing would be easier than for Mr. Webster, Mr. Clay, or Mr. Calhoun, or Mr. Clayton, to sink himself to the level of the lowest blackguard that rolls

in the gutter; but would it not be unwise in them to attempt it? Equally unwise is it in the United States to seek a competition in the great commercial markets of the world with the Russian boor or the Hindoo ryot. Yet such is the advice of Governor Wright, as it is also of the head of our Patent Office, the latter of whom seems to think that it requires but a small effort to enable us to place ourselves on a par with the nations of Europe of all others the most ignorant and wretched: such as are most distinguished for wasting their labor in obtaining small products from large surfaces, and maintaining agriculture in "its earliest infancy."

Such are the doctrines scattered broad-cast over the land by the wisdom and power of your governments, state and federal, at the public expense. It is against such fearful odds that the humble individual whom you have invited to address you to-day has resolved to contend, as far as that may be done through a monthly journal, which, to indicate its purposes, is entitled "THE PLOUGH, THE LOOM, AND THE ANVIL," aided as he hopes to be by the countenance and counsels of those who unite in the belief that the best security for a prosperous husbandry is in the policy which favors the growth of the greatest number of prosperous consumers near at hand, to require all that the most improved husbandry can produce.

Yes, my friends, it is in these Addresses and Reports of which I have ventured to speak, that we find the fashionable political economy of the day. It is for preaching such doctrine that the friends of what they call free trade in England have bestowed half a million on a single advocate. It is based upon the doctrine taught in all your schools, and which teaches that earth is a machine of constantly decreasing power to yield food, while population tends to increase in a constantly augmenting ratio, and that thus is produced a necessity for men to fly from each other. Common sense teaches us differently. We see it conspicuously here in New England, and it may be seen throughout the world, that men live and go ahead better as they are enabled most to combine their exertions with each other, and therefore that we should seek to emulate the course of England or of Belgium, which obtain large quantities of food from small surfaces, with constant improvement in the power of the land, rather than that of eastern Europe, where small quantities are obtained from large surfaces, with constant deterioration in the power of the land, as must be the case with all who are, like them, dependent on distant markets.

Why *should* this surplus continue? We have food to spare—and cotton to spare—and wool to spare—and the materials of iron to spare—and we want cloth and iron. Why not combine then ourselves, and have our own cloth and iron? Is it for want of capital? Certainly not. We invest in horses and wagons, and ships, to drag about over the world our food and our cotton, more than would build factories to make our cotton and wool and food into cloth, and furnaces to convert our food, and coal, and ore into iron. Is it for want of labor? Certainly not. We waste on the road, the rivers, and the ocean, carrying our food and cotton to market—and in carrying those who should be consumers of food to the West, there to become themselves producers of food—and on the farm, for the want of the regular demand for labor that exists where the loom and the anvil are near neighbors to the plough—more labor than would convert our cotton and wool into cloth, and our coal and ore into iron. We are always wasting capital, and labor, and manure, in strict accordance with the doctrines of modern English political economy, and with that inculcated or implied in the Addresses and Reports to which I have referred.

"In the natural course of things," I quote now from Mr. Carey, "there is a strong tendency towards placing the consumer by the side of the producer, and thus diminishing the quantity required of the machinery of exchange; and

wherever that tendency does not grow in the ratio of the growth of population, it is in consequence of some of those weak 'inventions' by which man so often disturbs the harmony of nature. * * * In the regular course of human affairs, the man who makes the shoes eats the food produced by the man who desires to wear them, and he does so because it is easier for him to bring the awl and the lapstone, by aid of which he may make ten thousand pairs of shoes, than it is for the farmer to carry to him the food necessary for his support while doing it. This tendency struggles incessantly to develop itself, and is seen on every occasion making its appearance, but it has almost invariably been crushed, the effect of which has been that the people of the United States are now far more widely scattered, and far less wealthy, than they would otherwise have been. They have been compelled to use a vast quantity of inferior machinery of exchange in the form of roads and wagons, in place of the superior machinery of steam-engines and mills, and they have been driven to begin on poor soils in the West, yielding ten bushels of wheat to the acre, when they might otherwise have worked their way down into the rich soils of the river bottoms farther east, portions of which may at all times be bought for far less than the cost of production."*

Such *is* the natural course of things, and were it not for foreign interference, we should have no surplus either of food or cotton, although labor employed in agriculture would be far more productive than it is at present. But for that interference, hundreds of thousands who are now at work in the West, producing ten bushels of wheat to the acre and exhausting their land, would be working at the loom or the anvil, in the factories and furnaces farther east and south, by the side of the ploughman who would be raising tons of hay, and turnips, and potatoes, and all would be richer and happier, more enlightened, and more free.

That interference has come from England. She has desired to be the great workshop of the world, and to compel all nations to bring their cotton and wool to be twisted, and the food to support the man who twisted it, and her whole policy has had in view that single object. She has desired to keep the loom and the anvil at a distance from the plough, to the injury of the farmers and planters of the world, and with no advantage to herself, as may now be seen in the condition of her laboring population. To the measures to which she was prompted by this desire was due our Revolution. To the necessity for combination against her was due the Federal constitution. To sad experience was due the feeling that prompted the patriot Jefferson to say to his countrymen, that "the manufacturer must now take his place by the side of the agriculturist." In accordance with that sentiment it is declared, among other things in the same spirit, in a manifesto signed by nearly a hundred amongst the most opulent and intelligent planters, in a single county in Mississippi, recently sent me for publication in *The Plough, the Loom, and the Anvil*—that they are in favor of such a Tariff as that of 1842, because, among many other reasons very clearly and forcibly assigned, "it affords," as they say, "adequate protection to all kinds of domestic labor, and renders us independent not only in name but in fact." To a feeling of the necessity for resistance to wrong has been due the whole series of protective tariffs, each in succession more protective than its predecessor. We have now a mere revenue tariff, yet it was seen clearly by its friends, that it could not stand unless made to a considerable extent protective, and much more so than that which existed in 1841. Great is truth, and it will prevail. The wave recedes again and again, but after each successive recession it rises higher than before. A home market is the great desire of every farmer

* *Past, Present, and Future*, p. 117.

and every planter, however much opposed in theory to the doctrine of protection. Every one knows that the nearer he can bring his customers to him, the more valuable are his labor, his land, and their products; and the day cannot now be far distant when the producers of rice and cotton will arrive at the conclusion that protection, by aid of which they may themselves build mills for the conversion of both their chief products into cloth, is in fact and in truth a farmer's and planter's measure, and that if they desire to enrich their land and themselves, they must unite with their brethren at the north, as a great number more than is generally supposed, and those among the most influential and intelligent, are ready to do, in the measures necessary to induce the owners of looms and anvils, and the men who work at them, to come and take their places by the side of the plough and the harrow.

That day arrived, Virginia and South Carolina will grow rich, for men will then cease to fly from rich lands, uncultivated, in search of poor ones, and then, my friends, I trust there will be seen, in those States to which I am attached by so many years of familiar intercourse, and so many grateful associations with many of their most distinguished men of all parties, many of those beautiful results of natural concentration that delight the eye of every southern man who visits New England. With each step in their progress in that direction, they will be enabled more and more to combine their exertions with each other, whether for the building of factories, the making of banks, the construction of roads and of steam-engines for canaling and draining, or the founding of asylums for the aged and infirm, the deaf, the dumb, the blind, and the lunatic, and with each there will be seen more and more to pervade every class of society that habit of kindliness and good feeling so obviously existent where men associate in small communities, as in New England, and so obviously absent where men are forced, in accordance with the doctrines of modern political economy, to congregate together in great cities like London, Paris, and New York, which are built up out of the profits of unnecessary exchanges—out of the spoils of the farmer and planter.

If your desire be, my friends, to see agriculture pass from its "earliest infancy" and attain its manhood, in all its full proportions, and to see your fellow man attain his highest development, physical, moral, and intellectual—or if it be to preserve unimpaired that happy form of government under which we live—let your efforts be, I pray you, given not to studying how you can compete in foreign markets against the pauper laborer of Europe, as recommended in the addresses and reports of distinguished men and high public functionaries to which I have referred, but to the promotion of the study of the true politics of agriculture. Exert yourselves to bring about the adoption of that policy which makes a market on the land for the products of the land—that policy which enables men to stay at home and become rich consumers, instead of flying to the west, there to become poor producers, to add to the already vast surplus for which we are, at enormous cost, seeking markets in all the countries of Europe—that policy, in fine, which brings together and gives equal support to the plough, the loom, and the anvil—which enables parents and children to remain together, securing husbands to the daughters and wives to the sons, and surrounding *their* parents with happy families of grandchildren—for it is not good, saith the Scriptures, that man should be alone, nor, (as was well added by Sterne,) "*woman either.*"

ON THE ROTATION OF CROPS.

An interesting report on this subject may be found, at page 264 of *The American Farmer*, vol. 3, from a Committee of the Montgomery County, Maryland, Agricultural Society, presented by that zealous and enlightened friend of the landed interest, A. B. Davis, "of that ilk."

The subject—though it may be somewhat musty, is still an important one, and is handled by the Committee in a clear and forcible manner. It pourtrays, in lively colors, the ancient, in contrast with the present condition and appearance of that good old county of peace-loving and industrious farmers, and truly some explanation would seem to be required, where the population goes on, or rather goes down, in ten years from 19 to 15 thousand; in a county lying under the very shadow of the Capital of the Union, and bordered by canals and rivers and railroads. We would, if space allowed, publish the whole report, though we have no room for the hundredth part of the practical matter that offers itself for our pages. For thirty years we have been endeavoring to keep pace with, and it may be in some measure to accelerate the march of practical improvements in cultivation, and in all the implements and animals employed therein. Leaving that duty now more particularly to the numerous and more able agricultural journals to be had for a bushel of wheat, and which every farmer should take, we are seeking to open fresh ground of usefulness, by endeavoring to learn, and to disseminate, the principles of *political economy that belong to the plough*, along with whatever comes to light that is *new* and commendable in the use of it.

Thus it is with this Report, as with innumerable essays that fall under our eye—we can only take that portion of it which falls particularly within the bent of our inclination, by holding up to emulation the example of men whose success in the field of agriculture has illustrated the value of even a few examples in the walks of peaceful industry. But again the question recurs—how does it happen that with such instances of the success which has attended the skill and diligence of such men as Roger Brooke, the Stablers, Hallowell, Stonestreet, Blair and others, the county should be sinking in population, from year to year, as appears by the statement of the learned and laborious Darby, for the birth-place of whom counties might well dispute, but to which, we believe, this very county of Montgomery can prove title, though we are not sure. Does not this intelligent and respectable Committee go it rather strong when they describe so much exhaustion and deterioration of every sort, charging the picture as we apprehend with colors rather too sombre—does not this Committee, may we presume to ask, rather over-strain the matter in their report, when they say, that all has proceeded from a *want of the proper rotation of crops!*

Hear them.

"To make more apparent the first position, your committee need only refer to the large tracts of common and old fields in this county, given up and forsaken, because not affording a sufficient return to defray the cost of cultivation.

"From these old fields, now covered with sedge and pine, the perpetual sight of which is painful to look upon, and in some places is only relieved by galls and gullies, we know that our forefathers once reaped comparatively rich and luxuriant harvests. Now, where mirth and hospitality once reigned, dreariness, desolation and want, seem to cover the land. What has produced the mighty contrast? Why are the hospitable mansions of our ancestors, in many situations, fast crumbling into decay—the broad fields, the lawns and gardens, turned to the common waste? We answer emphatically, because *a proper system of Rotation of crops was not understood, or, if understood, not duly appreciated.*"

Now we will venture to say, that if this committee of deservedly eminent gentlemen can prevail with a certain body of wise men, which has been incubating near at hand for the last nine months, over the affairs of the nation,

(without hatching any thing proportionably remarkable,) to establish as the permanent policy of the nation, (not of a *party*,) such encouragement to manufacturing industry, as will seduce or force the English manufacturer of cotton and woollen cloth, and the coal-heaver and the ironmonger, to come and take their stand, with their capital, machinery and experience, at Cumberland, on the head-waters of the Potomac and the canal, where the whole country is embedded with coal and iron, and with their steam-engines and their power looms, settle along down the river and the canal, until the sound of "the great falls of the Potomac," within the hearing of the Committee, shall be drowned in the noise of the mills and factories which these falls ought to have been driving for the last fifty years, there would quickly spring up there another Lowell, with an equal population, doubling that of all the inhabitants of Montgomery county; and then—and then what? Why then the whole country, for twenty miles around, would revive and look up, as verdure covers the parched field after a soaking summer rain, and there would be no longer occasion for committees to teach the ignorant farmer the "*proper rotation of crops!*" That would soon be understood and "properly appreciated." Population makes the food come out of the ground. Of all teachers of the "proper rotation," and of all else that pertains to successful and prosperous industry, *give us consumers at hand to pay for the products of industry.* Bring the loom and the anvil near to the plough, and he who follows the plough will soon learn when to plough and to *plough deep*—the virtue and profit of which was taught in a most masterly pamphlet,* exposing "the great error of American Husbandry," by another farmer of Montgomery county, more than forty years ago, as will, we dare say, be well remembered by our old friend Roger Brooke. We allude to that of Thomas Moore, whose name, were it only for that great and then most opportune service to Agriculture, would deserve to be recorded with honor in the annals of the Montgomery County Agricultural Society, ay, and to be cherished gratefully by every man who knows how to venerate the real benefactors of his race. We do not candidly know a county less in need of good precepts, merely, in the practice of agriculture. Only give to the people of Montgomery county the market which the God of Nature designed they should have, when he led the waters of the Potomac to fall in such prodigious volume over ledges of rock, which his bounteous hand provided for building on the spot; let the spinning jenny there spin the wool—and the loom there weave the cloth, and the tilt-hammer there beat out the iron, that is now spun and wove and beat out for us *in England*, by men who eat the bread of ploughs followed by the poor serfs on the Black Sea, and then the people of Montgomery will have a market on the land for the produce of the land; and need no longer, as now, throw away half their time and substance in getting over bad roads to worse markets. Then they can make *tons* where they now make only bushels. Then the farmer of Montgomery might answer, as did Mr. Phinney of Massachusetts, when lately we asked—"pray, my dear sir—how do you get remunerated for the labor of removing, as you tell me you have done, more than a ton of stone from every six feet square, off much of your land, now covered with the finest grasses and orchards of the choicest fruits? Where do you find customers to buy, as you tell me you sell $2000 of fruit sometimes in a single year?" "Why, sir, have we not," was his prompt reply, "besides many other towns, 30,000 hungry consumers at one little manufacturing village, Lowell, ready to buy all our spare fruit and milk—and butter and eggs, and poultry, and vegetables, and meat, from a *pig* of 400 pounds down to a pint of blackberries?" Yes, friends of

* This pamphlet was one of the first things which, being read when a boy, impressed our mind with the idea, that there *was* such a thing as *philosophy in agriculture!*

old Montgomery, rely upon it, it is this all-pervading stimulus of *certain and remunerating sale* afforded by the dense population of consumers, to which every county has a right, according to its natural resources, that teaches, beyond all other instructors, the proper rotation of crops—and the proper management of orchards. Nor does it stop there—its animating influence, like that of woman in all civilized countries, reaches everywhere and every thing—it enlivens the good housewife herself, in her poultry-yard and her dairy—the hens lay more eggs and the eggs hatch out the better for it, and fewer chickens die of the gapes—the milk yields more cream, and the cream more butter, and the butter comes quicker—even the ashes yield more ley and the soap hardens better and whiter. You shall see its effects in the lightness of the good woman's steps, in the brightness of her eye, and the cheerful and good-humored tone of her voice. In augmenting and certain demand for her chickens, and her butter, and her dried apples, and her peach leather, she sees the means to buy new gowns, and new shoes, and new gloves, and new bonnets for her beautiful, and what is much better, her dutiful daughters. In the demand of consumers near the plough, the anxious and devoted mother sees the means that will enable their lovers to propose for their daughters in marriage, and the happiness to have them settle around her. It is then that the housewife has the heart to "seek wool and flax, and worketh it willingly with her hands"—that her husband may be "known at the gate among the elders." In short, my friends, all sorts of good things come from having the loom and the anvil near the plough, as we shall be glad to show you more at large by sending to any who may desire it, all of them together, "THE PLOUGH, THE LOOM, AND THE ANVIL," to let you see how well they work together—for it is a truth and no joke, that throughout the world they all thrive in friendly association, and throughout the world the plough ceases to thrive when a great distance, and especially foreign countries, interpose between it and the loom and the anvil. But, after all, there are, in all localities, and under all circumstances, a few leading men, of strong inquiring minds, habituated to the *actual use* of man's distinguishing faculty; men who lead the way in all the courses of useful industry, just as the stalwart reaper proudly leads the harvest gang—men who do not stand like the ever-pointing finger-posts, that never *go* the way they point; and among such men, we took our pen to only recognise in this report, as entitled to stand out in the bold relief it presents him, our old friend as aforesaid—

ROGER BROOKE, OF MONTGOMERY COUNTY, MARYLAND.

NOR is the field of agricultural improvement, the only one in which he has been wont to be conspicuous—*Tally ho!* What say you General G., "Black George," as Old Hickory used to call you? Well it is, as we hope, by this time well known, that it comes peculiarly within our inclination and habit editorial, to do honor to all such men, devoid as they are of all ambition for display or distinction, but nevertheless, whose

"useful toil
Their homely joys and destiny obscure"

do real service to society, and entitle them to honor and respect from all men of true discernment.

Thus speaks the Committee in their Report, from which we make room for the following extract—

"We have promised to give some evidence to sustain our second position, viz.: that worn-out lands can be restored to fertility, and made highly productive; and, as example is justly considered entitled to more weight than precept, the committee deem themselves fortunate in not being compelled to go beyond the limits of our own county for instances so striking and remarkable, as to dispel all doubt from the minds of the most incredulous.

"Your committee will then make no apology for first (as entitled to most honorable distinction) introducing the venerable and respected name of ROGER BROOKE. This gentleman, we are informed, became possessed of an estate that had been subjected to the process we have attempted to describe in an early part of this report. His quick perception and far-seeing judgment admonished him that, to continue the same mode of farming, would bring ruin upon himself, and entail poverty upon his posterity. But he was too shrewd a calculator to continue a business with such results staring him full in the face. Accordingly, his first step in his system of improvement was to abandon the tobacco crop—being aware that, although it may have made many rich fathers, there were too many instances, in this county, of its having left an impoverished landed estate as an inheritance to their sons. His next step was to stock his farm with grasses, and carefully to husband and judiciously spread out all the manure he could raise in his barn-yard and collect about his homestead. To those members of the society who have seen his neat and highly cultivated fields, or have partaken of his hospitable board, or what to many will be remembered with still more delight, who have listened to the sallies of wit and humor as they playfully flowed from his well-stored mind, under the shade of his umbrageous trees—your committee need not tell the result: to others, it may be interesting to learn that, instead of having an impoverished estate to leave as an inheritance to his children, Mr. Brooke, in green old age, with them, enjoys the fruits of an estate, the value of which he has perhaps quadrupled.

"Stimulated by this example, and the march of improvement which characterizes the age we live in, a number of our farmers have abandoned the old practice, and adopted the modern system of improvement. Among those who have more recently signalized themselves in this respect, and who, it may almost emphatically be said, have changed 'the barren waste to fertile fields,' the committee will only mention the names of BENJAMIN HALLOWELL, SAMUEL T. STONESTREET, and F. P. BLAIR, Esqs. With such examples to encourage us, we think none need despair. In addition to the sources of improvement heretofore within our reach, we may now draw upon the shores of the Pacific, and the rich pasture fields of Virginia, which are annually sending us large contributions in the shape of guano and bone-dust, to aid our efforts in the work of improvement. Their application, thus far, has been highly satisfactory, and we deem their characters as great fertilizers now well established."

Salt v. *Wireworm.*—A correspondent in the *Gazette*, signing "Hantoniensis," requests information on the quantity of salt requisite per acre for the prevention or cure of wireworm. I beg to inform "Hantoniensis," (a foreigner no doubt,) that I sowed on two acres of land greatly infested with wireworm one ton of salt, (viz. twenty bushels per acre,) I also marked off a small piece upon which not a particle of salt fell; the salted part is a beautiful piece of corn, that not salted is not one-fourth of a plant, and I now regret that instead of sowing one ton on two acres, that I did not sow a ton per acre, (for even the best part is rather thin at places;) had I doubled the quantity I believe it would have been just the thing, although my neighbors thought me a fool for putting on as much as I did, and all felt quite satisfied that there was not the least doubt but that the salt would exterminate the wireworm and the wheat also.—H. K. HEMSTED, *Market-gardener, Ridgwell, near Halsted, Essex.*

P. S. Should "Hantoniensis" be passing through Ridgwell, and will condescend to call on me, I shall be most happy to show him the piece of wheat, and to partake of a glass of my home-brewed afterwards.—*H. K. H.*

MANIFESTO OF SEVENTY-NINE COTTON PLANTERS,

OF ADAMS COUNTY, MISSISSIPPI,

IN FAVOR OF PROTECTION TO AMERICAN MANUFACTURES.

We confess we had no expectation, when we undertook to show the identity of interests between the Plough, the Loom, and the Anvil, that we should have our hands thus strengthened and our hearts emboldened as they are by the following letter and manifesto, from planters of cotton, among the most opulent and deservedly influential in all the southern country. We feel proud to recognise many of them as valued friends, and should not have valued them the less if we had found them, as we should have apprehended some of them at least were, opposed to us in the political doctrines which, in our judgment, best comport with the interests of the planter. As it is, we feel strengthened and fortified in proceeding to show that of all guaranties of prosperous husbandry, the most reliable is that which is based on the policy which places the greatest number of consumers in the nearest proximity to the producer.

New River, August 28, 1848.

To J. S. Skinner, Esq., Editor.

Dear Sir:—I have the first number of "*The Plough, the Loom, and the Anvil*," and am much pleased to find you are again working on your own account. I am glad to see some notice of a steam plough; such a machine is much wanted in the cultivation of the sugar-cane, and might be used to great advantage in this level country. The cow pea is used as a fertilizer, here, with the most marked advantage. It is commonly planted among the corn, when that plant is receiving its last working, and is ploughed in green, in September and October, with large ploughs with two coulters, one, near the end of the beam, being reversed, so as to cut the vines on the surface of the ground. The best planters say, they make the largest crop of sugar on the land that bore the largest crop of pea-vines. These large ploughs are drawn by three yoke of oxen, and cut about nine inches deep and twelve wide. This is very poor work, compared with what a correspondent of the "National Intelligencer" says Professor Napes does on his farm in New Jersey. The professor, according to this gentleman, with one yoke of oxen runs a plough that cuts sixteen inches deep. This is common work. When he wishes to plough deep, the professor runs twice in the same furrows, and then he cuts three feet (3 feet) deep. His oxen, however, weigh 3800 lbs. a pair; ours about 1200 to 1500 lbs. a pair. I should like to know what plough Mr. Napes uses, and of what breed his oxen are.*

I am also much pleased with your views on the protection of American industry; and to show you how near you "jump in judgment" with a number of the wealthiest and most intelligent cotton planters in the Union, I send you, herewith, a copy of a paper, published by them in 1844, embodying their views on the subject of the tariff of 1842, and called the "Planters' Manifesto." The subscribers to the manifesto were obtained in one county (Adams) alone in Mississippi.

I presume you consider subscribers to the Farmer's Library as subscribers to "The Plough, the Loom, and the Anvil."

With sincere wishes for your success, I am, very respectfully yours,

W. J. M.

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* Our correspondent should make allowance for the light sandy soil of New Jersey. Still three feet deep at two cuts *is* deep cutting, it must be confessed.

"PLANTERS' MANIFESTO."

Natchez, October 24, 1844.

WHEREAS, an opinion prevails in some portion of the planting region, that the protective policy, and especially the tariff act of 1842, has impoverished and oppressed the cotton planter, to an extent sufficient to warrant a resort to remedial measures, to resist its operation or obtain its repeal:

And whereas, it is believed by many of those largely engaged in planting in this section, that the injurious effects attributed to the tariff may be satisfactorily traced to other causes, it is deemed proper to give public expression of their opinion, in the hope that those who differ from them may be induced to consider not only calmly and dispassionately, but earnestly, whether they are not as much interested in the permanency of a policy which insures the general prosperity of the whole country, as those who are now immediately and directly protected by it; and whether their interests, as producers, are not dependent on the prosperity of the consumers. The undersigned, therefore, residents of Adams county and growers of cotton, set forth some of the views which have influenced them, in giving their support to the protective system.

They are in favor of such a tariff as that of 1842, because it affords, as they believe, adequate protection to all kinds of domestic labor, and renders us independent, not only in name but in fact.

Because they believe it will induce, at the north, large investments of capital, and the employment of a large number of laborers in the manufacture of cotton goods; that it will extend the consumption of manufactured articles, and thereby increase the demand for the raw material; that it will give the growers of cotton two markets instead of one, and one of those a home market.

Because it protects, indirectly, the growers of small grain, and gives them a home market.

Because it protects, indirectly, the hemp growers, and gives them a home market, and keeps the large amount of capital and labor now invested in that business from being employed in extending the culture of cotton.

Because it protects, indirectly, the breeders of hogs, of horses, of cattle, and of mules, and gives them a home market.

Because it protects the producer of sugar, gives him a home market, prevents the vast amount of capital and labor invested in the culture of cane from being directed to the already redundant production of cotton.

Because they believe that all experience proves that its ultimate tendency is to reduce the price of manufactured goods, and thereby benefit consumers of all classes.

Because they believe no one great interest of the country can be adequately protected, without, in some degree, extending protection to all other interests, and that none derive more essential benefit from the general prosperity of all other pursuits than the cotton grower.

But above all, they are in favor of such a tariff as that of 1842, because they believe the interests of the manufacturers of cotton goods at the north to be identified with the interests of the growers of cotton at the south. And, that as strength is added to those two great interests, the one at the north and the other at the south, so will strength be added to the bonds which bind this glorious Union together; and they do most solemnly believe, that if the system of affording adequate protection to American industry be persevered in for but a few years, all the great interests of the country will become so blended and so dependent one upon another, that

all attempts, whether of abolitionists or of abstractionists, to destroy our beloved Union, will be laughed to scorn for centuries to come. Signed—

James Metcalf, J. P. Ashford, M. Lasley, D. Farran, Thomas J. Davis, G. P. Ogden, Harry Sojourner, James H. Mitchell, William B. Fowles, Alexander C. Farran, Isham Griffin, John H. Thom, William Bisland, H. Chotard, Thomas Henderson, G. B. Shields, Robert McCullough, L. R. Marshall, Stephen Duncan, S. M. Warren, H. Elliott, James Surget, J. C. Wilkins, A. S. Benjamin, Jun., C. Y. Dahlgran, S. A. Cartwright, B. L. C. Wailes, Thomas Affleck, Isaac Dunbar, J. C. Inge, E. L. Wailes, L. C. Wilkinson, O. Metcalf, James Carson, Jun., Gerard Brundon, C. Hale, O. Kibbe, James F. McCabb, Samuel Chamberlain, R. Dunbar, James P. Sessions, John Ker, H. L. Conner, A. W. Ogden, Benjamin Chase, James P. Smith, George Calhoun, Alexander Montgomery, S. M. Reuth, A. C. Henderson, Austin Williams, J. N. Helm, J. F. Gillespie, B. O. Smith, A. Kinsey, C. Marck, J. A. Saunderson, R. R. Barker, Lewis Lum, Allen Grafton, J. F. Roach, C. Stowers, J. Themsbury, J. C. Coleman, R. D. Warde, J. C. Warne, Levi Pipes, D. Knott, John Rife, John R. Davis, Andrew Grafton, W. S. Bernard, B. Wade, J. P. Walworth, C. N. Nicholls, W. J. Minor, John Hutchins, P. R. Nichols, A. S. Benjamin.

WHY GO AWAY FROM KINDRED AND FRIENDS TO THE "FAR-WEST?"

Except to indulge that roving temper, which prompted old Daniel Boone to say, that he could not breathe freely when civilization approached his dwelling in the woods.

The facilities for getting away to the west are so great and so systematized, with numerous agents and harpies on the look-out for all immigrants who come, that our old sea-board states are no more thought of than if they had been sunk in the ocean fifty years ago. Yet look here at the evidence of their capacity to yield ample return to labor, and that in the midst of every social convenience and arrangement. Mr. Newton, not long since a member of Congress, and a very enterprising agriculturist, living in one of the oldest and most deserted districts of Virginia, says to the editor of the American Farmer:

"Our agriculture is rapidly improving in this region. We formerly thought ours not a suitable soil or climate for wheat, but now by good husbandry and suitable manures we make fine crops. There have been frequent instances of late of a product of from fifteen to twenty-eight bushels per acre, on lands formerly deemed incapable of producing wheat. From a bushel and seven-eighths of Zimmerman wheat, I reaped forty-two bushels—a part of it yielded at the rate of twenty-eight for one.

"We are using guano to some extent. The African we find greatly inferior to the Peruvian. The price of it is too high, considering the low price of wheat. I wish to purchase about ten tons, and if the price falls under $40 I will do so. I have been informed that Mr. Wm. Harding, of Northumberland county, Va., made through a considerable field dressed with Peruvian guano, twenty-seven bushels of wheat for one. The land on which this was accomplished is precisely such as is sold throughout the "forest" of the Northern Neck at $2 to $4 per acre. He had, of course, improved it somewhat by other manures (lime, &c.) before. Mr. Robert Lyell, of Richmond county, made from a similar dressing on old and unimproved corn-land, near seventy bushels for one. Thousands of acres of such land as Mr. Lyell's and Mr. Harding's, in a healthy region, may be purchased in their unimproved state for less than $4 an acre. Yet people will prefer the west in search of land!

ADVANTAGES TO BE DERIVED FROM A MORE EXTENDED USE OF OXEN

IN THE HUSBANDRY OF THE UNITED STATES.

We should think we have labored to little purpose, if any practical farmer who reads it should hesitate to believe that in the following Essay alone he will be repaid for the amount of his subscription for a year. How few, by the by, reflect on the labor bestowed by Editors on special articles—labor for which a lawyer, if called on to collect the materials and to draw out the argument of equal volume and with equal care, would charge more than the amount of fifty subscribers. The following appeared in the American edition of "Every Man his own Cattle Doctor," by the senior Editor of this journal—published by Lea and Blanchard, who have been kind enough to loan us the cuts.

So deep is the conviction of the great saving which would be accomplished by individuals, adding immensely, in the aggregate, to our national wealth, by *a more extended use of* OXEN in lieu of HORSES in the general labors of husbandry, that the occasion is here embraced to present the views by which that conviction has been established, and the editor feels persuaded that he might venture to introduce these views, on the score of their intrinsic importance, even though the subject to which they relate were not so naturally associated, as it seems to be, with a work on the *diseases of cattle.*

That "a farming district may be judged of by its *working oxen*, as safely as by its barns or its corn-fields," has been laid down as an axiom by a Committee of Farmers,—working men in the true sense of the word,—of Massachusetts, at an exhibition where no premium was offered for *horses*, expressly on the ground that "it was believed that the interest of the farmer is promoted by substituting the ox for the horse, *for most purposes*, as he is fed with less expense, is more patient of labor, and is more valuable when his service is ended." This declaration in favor of the ox for "*most purposes*" is at once explicit and broad, and might seem to settle the question; but there are considerations arising out of difference of soil and climate, which obviously demand a comparison of circumstances to see how far that system admits of general application, which is here proclaimed on the best authority to be expedient throughout New England: and this brings us at once to the most formidable objections to the use of oxen—their *alleged incapacity to withstand, when laboring, the heat of more southern latitudes*, and their *slowness of motion.*

As to New England, in addition to the evidence already quoted, we may give here the answer of the venerable Josiah Quincy, now President of the time-honored Harvard University, to a letter once addressed to him by the writer of this. "Oxen," said he, "are used almost wholly for plough and team work in this quarter of the country. A *single* horse is usually kept by our farmers to go to mill and to church, and for the convenience of the family. This is so universal as to be almost without exception among mere farmers. They certainly answer all purposes except perhaps speed, and in this, on a *long journey*, they are considered as *quite equal to horses.* Our farmers are so satisfied with their utility and economy, that no argument would induce them to change."

Hence it is seen that no reasoning is necessary to recommend the ox to general use in all that portion of America, and this evidence has been adduced to prevail upon southern readers to *reflect* on the subject, by showing, what many of them do not know, that already, in *many* of our States where the folks are nice judges of economical and labor-saving machines, animate and inanimate, oxen are actually substituted, and horses altogether banished for all farming purposes, and that their speed on long journeys is quite equal to that of horses. On the point of *speed* we shall speak again and conclu-

sively, when we shall have dismissed the one in hand, to wit:—*capacity to bear heat!*

It was for a long time believed that the ox was a native of Europe, and that in the Aurock, running wild in the forests of Poland, his original type was to be found; but Cuvier's researches in comparative anatomy have established the belief that the cow is a native of Southern Asia, and thence may be deduced an argument that there is nothing in the natural constitution of the ox which forbids his manifesting his entire capabilities in southern climates. If there were, how is it that in South America he reaches his highest developments of size and power? As one of the Commissioners to South America, Chancellor Bland, in a report which Mr. Adams pronounced to be one of the ablest papers ever presented to the government, thus describes the ox-carts employed, and the wonderful powers of endurance of this patient animal in crossing the pampas of Buenos Ayres. It speaks conclusively to both the objections—want of speed and of power to bear heat.

"The Tucuman and Mendoza carts, at a little distance, looked like thatched cabins slowly moving over the plain—the whole machine is destitute of a nail or a bit of iron; its great coarse wheels are not less than eight feet in diameter; six oxen, in general noble strong animals, move it; the two front pair have a great length of cord by which they draw; and the load of the cart, which, on an average, is not less than four thousand weight, is pretty nearly balanced on the axletree; the body of the cart is either covered with raw hide or thatch, made of reeds or straw; and with a collection of brush-wood, as fuel, tied on the top, and brought from the westward of the pampas, these carts are seen crossing the plains in caravans of from thirty to forty together. On the journey the oxen are unyoked occasionally through the day and night, and permitted to seek their food round about. Thus without any other provision than what is necessary for himself, the carrier pursues his way over a waste of thirty days or six weeks' passage. From Buenos Ayres to Mendoza the distance is nine hundred miles, and the journey is performed in about thirty days."

In some parts of England they formerly had *ox races*, and it is said that some years ago an ox ran four miles, over the course at Lewis, for one hundred guineas, at the rate of fifteen miles the hour.

We are told that in India bullocks are used for the saddle and coach, and that there travelling oxen are curried, clothed and attended, with as much solicitude, and much greater kindness, than we bestow on our best horses. The Indian cattle are extremely docile, and quick of perception, patient and kind; like the horses, their chief travelling pace is the trot; and they are reported by those who have ridden them often, to perform journeys of sixty successive days at the rate of thirty to forty-five miles a day.

To come back to our own country on this point, it is worthy of being here added, that in an address delivered before the Barnwell Agricultural Society of South Carolina in 1821, Dr. J. S. Bellinger remarked, that "in the lower districts of our State they appear fully to appreciate the value of their labor in heavy drafts. With those of us who have attempted the use of them, oxen appear fully calculated to answer the many purposes upon our farms to which we almost exclusively apply the more expensive, though nobler animal, the horse."

Time was when the horse was not considered "the nobler" of the two; else why the many cautions in Scripture in favor and in honor of the *ox*—thou shalt not muzzle the *ox*—thy *ox* shall not labor on the Sabbath day—thou shalt not covet thy neighbor's wife nor his maid—nor his *ox!*

The late James M. Garnett, of Virginia, honored be his name by all friends of American agriculture, stated in one of his addresses—"A gentleman of

my acquaintance had a mixed team of horses, mules, and oxen—in each season his horses failed first, the mules next, although both were fed upon grain and hay; and the oxen, fed exclusively on hay and grass, *finished the crop*. But to come down to the present time and nearer home, in Maryland, at the hottest season of the year, and the most busy one with the planter, the same teams of oxen are worked, during the whole day, hauling very heavy loads of green tobacco for weeks together, and do well without any food but the grass of common pasturage on being turned out at night—whereas horses, working steadily in the same way, on the National Road in wagons, consume twenty-five pounds of hay, and grain at the rate of four bushels of oats per day for the five horses, or four-fifths of a bushel for each horse—or, what is considered equivalent, four bushels of corn in the *ear*—making of oats at the rate of two hundred and thirty-two bushels for each horse for a year!"

As to *horse* power on the National Road, the following is the answer from Major Thruston:—

"Cumberland, Maryland, November 17, 1843:—The general result, (for they differ widely in their opinions,) obtained by conversation with the oldest *teamsters* on the National Road, is this—A five horse team with a load of sixty cwt. (the average) will make daily, throughout the year, *fifteen miles per day;* the weight of the empty wagon between one and a half and two tons. At this work horses will not last as long as at farm-work by one third, certainly. They average one set of shoes monthly, each horse; cost of shoes, one dollar each per month; feed, four bushels of oats per day, or four-fifths of a bushel per day to each horse; the same of corn in the *ear;* hay, twenty-five pounds. On this subject they are uniform in their statements. This amount of food is enough, and not more than will be consumed."

But the comparison in point of expense will be extended in another part of this essay.

In answer to the argument against oxen now under consideration, and the one which has had most influence in restricting the use of them, we now offer the views urged by the illustrious Madison, whose pen simplified and enlightened every subject it touched, as could not but happen with a mind so pure and so bright.

The objections generally made to the ox are—1st, that he is less tractable than the horse; 2d, that he does not bear heat as well; 3d, that he does not answer for the single plough used in our corn-fields; 4th, that he is slower in his movements; 5th, that he is less fit for carrying the produce of the farm to market.

The first objection is certainly founded in mistake. Of the two animals the ox is the most docile. In all countries where the ox is the ordinary draught animal, his docility is proverbial. His intractability, where it exists, has arisen from an occasional use of him only, with long and irregular intervals; during which the habit of discipline being broken, a new one is to be formed.

The second objection has as little foundation. The constitution of the ox accommodates itself as readily as that of the horse to different climates. Not only in ancient Greece and Italy, but throughout Asia, as presented to us in ancient history, the ox and the plough are associated. At this day, in the warm parts of India and China, the ox, not the horse, is in the draught service. In every part of India the ox always appears, even in the train of her armies. And in the hottest parts of the West Indies, the ox is employed in hauling the weighty produce to the sea-ports. The mistake here, as in the former case, has arisen from the effect of an occasional employment only, with no other than green food. The fermentation of this in the animal, heated by the weather, and fretted by the discipline, will readily account for

his sinking under his exertions; when green food even, much less dry, with a sober habit of labor, would have no such tendency.

The third objection also is not a solid one. The ox can, by a proper harness, be used singly, as well as the horse, between the rows of Indian corn; and equally so used for other purposes. Experience may be safely appealed to on this point.

In the fourth place, it is alleged that he is slower in his movements. This is true, but in a less degree than is often taken for granted. Oxen that are well chosen for their form are not worked after the age of about eight years, (the age at which they are best fitted for beef,) are not worked too many together, and are suitably matched, may be kept at nearly as quick a step as that of the horse—might I not say quicker than that of many of the horses we see at work, who, on account of their age, or the leanness occasioned by the costliness of the food they require, lose the advantage where they might have once had it?

The last objection has most weight. The ox is not as well adapted as the horse to the road service, especially for long trips. In common roads, which are often soft, and sometimes suddenly become so, the form of his foot and the shortness of his leg are disadvantages; and, on roads frozen or turnpiked, the roughness of the surface in the former case, and its hardness in both cases, are inconvenient to his cloven foot. But where the distance to market is not great, where the varying state of the roads and of the weather can be consulted, and where the road service is less in proportion to the farm service, the objection is almost deprived of its weight.

In cases where it most applies, its weight is diminished by the consideration that a much greater proportion of service on the farm may be done by oxen than is now commonly done; and that the expense of shoeing them is little different from that of keeping horses shod. It is observable that when oxen are worked on the farm over rough frozen ground, they suffer so much from the want of shoes, however well fed they may be, that it is a proper subject for calculation whether true economy does not require for them that accommodation, even on the farm, as well as for the horses.

A more important calculation is, whether, in many situations, the general saving by substituting the ox for the horse would not balance the expense of hiring a conveyance of the produce to market. In the same scale with the hire is to be put the value of the grass and hay consumed by the oxen; and in the other scale, the value of the corn, amounting to one-half of the crop, and of the grass and hay consumed by the horses. Where the market is not distant, the value of the corn saved would certainly pay for the carriage of the market portion of the crop, and balance, moreover, any difference between the value of the grass and hay consumed by oxen, and the value of the oxen when slaughtered for beef. In all these calculations, it is doubtless proper not to lose sight of the rule, that farmers ought to avoid paying others for doing what they can do for themselves. But the rule has its exceptions, and the error, if it be committed, will not lie in departing from the rule, but in not selecting aright the cases which call for the departure. It may be remarked that the rule ought to be more or less general, as there may or may not be at hand a market by which every produce of labor is convertible into money. In the old countries, this is much more the case than in new; and in new, much more the case near towns than at a distance from them. In this, as in most other parts of our country, a change of circumstances is taking place, which renders every thing raised on a farm more convertible into money than formerly; and as the change proceeds, it will be more and more a point for consideration how far the labor in doing what might be bought, could earn more in another way than the amount of the

purchase. Still, it will always be prudent, for reasons which every experienced farmer will understand, to lean to the side of doing rather than hiring or buying what may be wanted.

The next most serious charge against the ox is constitutional *slowness of motion*, which, as many suppose, no course of education can overcome, but which may be set off in comparison with the greater speed of the horse, as Æsop illustrated the difference in the long run between the pace of the "*tortoise and the hare!*"—"The greater haste the less speed," is a proverb suited to this case as to that. It has already been seen that ox-teams travel over the ever-verdant pampas of Buenos Ayres, at the rate of thirty miles a day, for a month together. Twenty years ago, the writer of this held correspondence with Commodore Jacob Jones, himself a practical farmer, and an habitually close and judicious observer, and then commanding our squadron in the Mediterranean, on the subject of Andalusian horses, cattle, and other animals, with a view to the importation, under authority from the Albemarle Agricultural Society, of such as might be deemed essentially superior to animals of the same species in America; and we now quote from his letter as applicable to the questions both of speed and susceptibility to heat:—"The cattle that I have seen in Spain appear to be nothing superior to ours, nor have I seen anywhere on the coasts of the Mediterranean any that appear better than those in America, except a race of white cattle at Naples used for the draft. I was informed by a gentleman who, in supplying the government with timber, had used thirty yoke of them for two years, that during that time they had constantly travelled from twenty to twenty-five miles a day. They are generally fifteen hands high; their bodies long, thin, and deep; legs long; small light head; sharp muzzle resembling deer; color entirely white, except black nose, ears, and tuft of the tail. They are most frequently worked in the thills of the cart, and are as spirited and walk as *quick* as a horse, and appeared not to suffer from heat more than a horse."

To show, however, that we are not dependent on any foreign stock, it may be stated that the small, pale-red old field ox about Salisbury in Maryland will travel twenty-five miles in a day, with heavy loads of lumber going, and returning empty, over the sandy roads of that region; while it may be affirmed, after particular inquiry, that the distance made by the heavy-bodied, grain-devouring, Conestoga horses on the National Road between Cumberland and Wheeling averages not over sixteen miles, six horses with loads of from six to eight thousand pounds.

To the letter from Major Thruston already given may be added the following, which goes somewhat more into detail, from Mr. Agnew, Postmaster at Wheeling, Virginia:—

Wheeling, November 23, 1843.

J. S. Skinner, Esq.

Dear Sir,—Your favor requesting me to obtain information respecting horses, wagons, &c., was received in due course of mail; but as I was just leaving for Pittsburgh, I was compelled to defer answering until my return. I conferred with several wagoners, and give below the result of their united opinions. Respectfully, your obedient servant,

David Agnew.

1. The usual average daily travel of loaded wagons?	Sixteen miles.
2. How many horses, and their average cost or value?	Six horses, average cost of each sixty-five dollars.
3. The average time that horses so employed will last?	Seven years.
4. At what age is it considered safe to put them to such labor?	Five years. Many are used at three and four years.

5. What the average cost of shoeing each horse per annum?	Fifteen dollars.
6. What is the usual feed of kind and quantity, and to how many oats is it equivalent where oats are not used?	Oats is the only feed in use. Four and a half bushels is allowed per day for six horses.
7. As to hay—is it in regular use on the road, or does cut straw, or what, take the place of it?	Cut straw is not used. Hay is in regular use.
8. What is the *usual* weight of their load exclusive of their wagons, and what the weight of their wagons?	The weight of loads varies from sixty to eighty hundred pounds; seventy hundred pounds is the usual weight; wagon's weight about 3500 lbs.
9. What is the first cost of wagon-harness per horse, and how long will a set of harness last?	A wagon of the largest size used on the National Road costs $250; harness per horse, $20; and will last six years.
10. What is the cost of a wagon in proportion to what it will carry—and about how long will a wagon last with ordinary care?	A wagon that will carry 3000 lbs. costs $150; 4000 lbs. $160; 5000 lbs. $175; 6000 lbs. $200; 7000 lbs. and upwards, $250; and with ordinary care will last four years.

In support of the adaptation of the ox to the road for heavy draft and long journeys, the last authority which it is deemed necessary to produce is one of unquestionable validity; being no other than the testimony of the late Timothy Pickering. Being called on for his knowledge of the employment of ox-teams for the transportation of military stores during the Revolution, when he acted as Quarter-Master-General under General Washington, the following is extracted from an interesting reply, in which other views are embraced, connected with other aspects of the subject, to be presently considered:

"When in August, 1781, disappointed in the expected co-operation of a French fleet against the enemy in New York, the commander-in-chief decided on the expedition against the British army under Lord Cornwallis in Virginia, I received his orders to provide for moving the troops destined for that service. The *ox*-teams effectually performed the transportation of baggage and stores to the points where they were relieved by water conveyances. From the head of Elk in Maryland (sixteen miles eastward of the Susquehanna) to James' River in Virginia, near three hundred miles, the ox-teams (without loads) travelled expeditiously. The heavy artillery, shot, shells, &c., brought from the head of Elk by water, were landed on the shore of James' River, I think at or near Jamestown, whence they were transported by the ox-teams to our camp before Yorktown, a distance, I believe, of about fourteen miles. In the performance of this service, those teams were of essential importance.

"The late Colonel Jeremiah Wadsworth of Connecticut (one of the most judicious and efficient men in business that I ever knew) was then the contractor for supplying the French army with provisions, teams, carriages,—in a word, with every thing necessary for it, in the quarter-master's and commissary's departments. I introduce his name, because he had provided a great number of ox-teams and wagons for the use of the French army during the same campaign, and *these also travelled to Virginia.*

"I always understood that the great transportation of provision and stores from Massachusetts and Connecticut to the troops on Hudson's River, was *almost wholly performed by ox-teams during the war.*

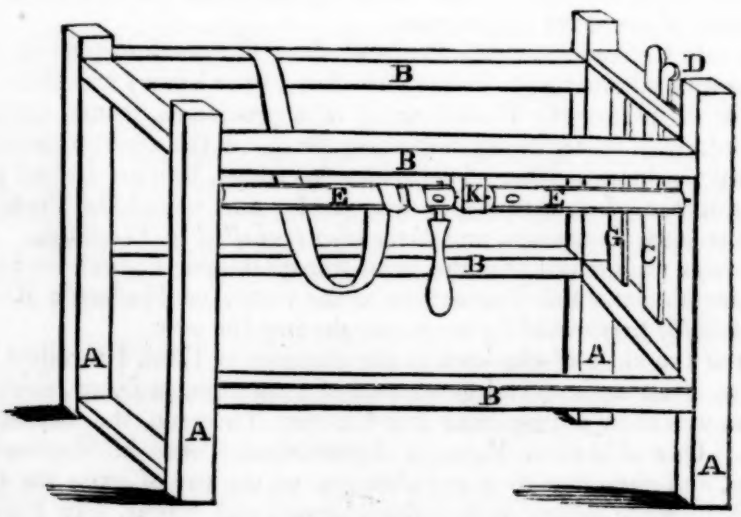
"Just at the close of the war, in the summer of 1783, I recollect being at the house of an agricultural gentleman of Princeton, in New Jersey, where Congress was then sitting, and that Charles Thomson, the Secretary, was present. One of Arthur Young's Agricultural Tours in England lay on the table, and gave rise to a conversation on the use of oxen for the draft, particularly when geared with collars, hames, and traces, like horses; and

Mr. Thomson related the following fact, now, for substance, perfectly in my recollection. Travelling in that part of Chester county in Pennsylvania which lay between Lancaster in that State and Newport on Christiana creek, Mr. Thomson fell in with a team of a novel character in that country, being composed of one pair of horses and one pair of oxen: *and the latter were accoutred with harness like horses, only with the collars turned upside down.* His curiosity being excited, he stopped and made some inquiries, and received from the driver an account as follows: that he and a neighbor, each having a horse-team and wagon, had entered into a contract to transport a quantity of flour (I think in a given time) to Newport; that in the midst of the work one or two of his horses failed, (fell sick or died,) and he was not in circumstances conveniently to procure others; but he had a pair of oxen, and he concluded to try whether they would supply the place of his horses; that he made the experiment and succeeded. He told Mr. Thomson that the oxen were more useful to him than horses; for after some fall-rains, when the roads had become miry, he continued to carry his full complement of barrels of flour, while his neighbor's horse-team, frequently getting *stalled*, (the familiar term in Pennsylvania when a team gets set fast in a slough,) *compelled him to lessen his loads.* But he added, that in returning from Newport with their wagons *empty*, his neighbor had the advantage in *speed*, although none in the actual performance of the contract."

Thus it appears that as Rome is said to have been *saved* by the cackling of geese, the labor of *oxen* contributed on a critical occasion to the establishment of the American Republic. So much in answer may we not say in refutation of the objection made to these animals in comparison with horses for heavy draft even *on the road.*

OX-SHOES AND MACHINE FOR SHOEING OXEN.

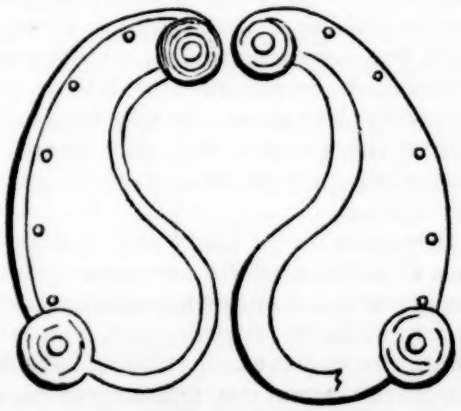
A great impediment to the use of oxen on our public *roads* in the winter season, is the liability of their feet to get sore for want of *shoes*—a great scandal on the intelligence and humanity of all southern farmers—for nothing can be easier or more simple than the manner of doing it in New England, where cattle driven on the roads in winter are as regularly shod as horses. In the hope of introducing a practice recommended equally by interest and humanity, a view is here given of the frame used for that purpose, and the smith who does not provide himself with one ought not to receive the patronage of any enlightened neighborhood.



The frame, as here exhibited, should be seven and a half feet long by three and a half wide, and five and a half high, consisting of four upright posts, A A A A, and two horizontal bars on each side, B B B B, joined by mortices. In the bars of one end, at the distance of ten inches from each other, are two perpendicular stanchions, the one fixed, the other movable, and fastened by a key D, which are let into the bars and form a head stall. The lower bars of the sides are eighteen inches from the ground. Immediately under the upper bar on the right side is a windlass E E, separated in the centre, working in the posts, and a block K let fall from the bar—with one end passing over, and moving upon the opposite beam, is a broad leather strap six feet long, attached by an iron ring at the other end to the staples in the windlass. To give sufficient stability, the posts may either be let into the ground, or framed into sills, with end braces.

The ox to be shod is led into the frame, and his head confined in the head stall. The strap is brought under the lower part of the belly and fastened to the windlass, by turning which his hind feet are raised six or eight inches from the ground. The foot is then lashed by a cord to the upper surface of the lower bar. In this situation the shoes are easily set. By moving the strap till it comes near the fore-legs, the other part of the body is raised, and the shoes set on the fore-feet in like manner.

The shoe is the arc of a circle, of the thickness of a common horse-shoe, from half to three-quarters of an inch wide, flattened to double that width at the hind part. The flat or hind part covers the frog, the tenderest part of the foot. The heel and toe are either corked or raised to make a level with the heads of the nails. Five or six nails are sufficient to secure it. Particular care must be taken by the smith in shoeing, that the toes of the shoes do not extend quite to the extremity of the hoof, in which they impinge on each other, and by the motion of the feet are easily thrust off. These directions are given by Benjamin Coleman, Esq., of Virginia, and are illustrated by the following sketch.



For the speed of an ox-team in the plough we might rely on the numerous certificates of committees for the last twenty years, in which our agricultural annals abound, from Boston in the north to Baltimore at least going south. These testify in innumerable cases to their ploughing five or six inches deep, an eighth of an acre thoroughly well, at the rate of an acre in four hours. Making the most liberal allowance, however, for the favorable circumstances under which the work has been done at this rate, and it may still be safely assumed that a yoke of oxen, well trained, will turn over more than an acre of strong land in eight hours.

All that we have contended for is more than confirmed by the following testimony taken from a very interesting letter from Governor Hill, dated 7th

December, 1843, on the use of oxen in the lumbering business in Maine. He says—"My own experience in this matter is quite recent, and of course limited. I have at this time cattle of my own raising, which, having *been taught to step quick*, and having worked in the same team with horses, will side by side travel as fast and plough as much in a day as the same number of horses. A pair of these oxen will turn over with a plough that carries twelve inches of the last year's corn or potato ground, or easy stubble land, from one and a half to two acres in a day, working eight hours, four in the forenoon and four in the afternoon. Oxen well fed with hay and a portion of Indian corn or meal, will in the heat of summer stand it to work daily from eight to ten hours."

At the Exhibition of the Maryland Agricultural Society in 1823, (*quorum pars fui,*) in the view of hundreds of spectators, an ox-team started in competition with five horse-teams, and was the second in completing an equal quantity of ground, and would have been the first if the horse-team had cleared out the middle furrow; but supposing that when ready to start the horse has a little the advantage of foot, it is to be considered that for small jobs and short bouts his competitor can be more quickly hitched up, and the work despatched by the time the horse would be geared:—such cases as we have stated abound in all the accounts of the proceedings of agricultural societies. A writer in the Memoirs of the Massachusetts Agricultural Society, speaking to a community who neither could nor would be deceived on a matter so well understood by, and so deeply interesting to them, says—"The principal argument of the advocates for the cultivation by horses in Maryland seems to be the superior speed of the horse. Now this must proceed from an *imperfect training of the cattle.* With us our cattle will plough an acre of ground *much better*, and in as short a time, as a pair of horses would do it, unless they can trot their horses in the plough; so they will get in a ton of hay in as short a time." Here we are well persuaded the sagacious writer hits the nail on the head, when he suggests that the objection on the score of speed must arise from an "*imperfect training of the cattle.*" He must possess an imperfect knowledge of the difference between the habits of the New England and the Southern ploughman, who is not prepared to admit that in nothing is that difference greater than in their treatment of all their cattle, and *more especially their oxen.* In this very difference, in fact, is to be found the solution of the question, and this brings us to the point for making the suggestion we propose on the *breed, gearing, training, and general treatment of the ox.*

As to the breed, there can be no doubt that if regard were had alone to the working qualities of cattle, a *skilful breeder* might, in a series of years, not very long, manufacture out of our own country cattle a race which would be as distinguished for quickness of motion and endurance as, by like care and attention and skill, the improved short-horns have been made, and established for early maturity, symmetry and disposition to lay on flesh and fat on the most valuable parts. There is, however, in the two cases, this obvious difference in the system of breeding the horse and ox, which is a matter of necessity militating against the ox and detracting from him on the score of action, leaving it even a subject of surprise that he should be as quick as he is. While the horse, for instance, is bred and cultivated with a view to the possession and display of a *single quality*, either high-bred for light harness or the saddle, or cold-blooded, with weight to be thrown into the collar, for the plough or heavy loads, for the cart or the wagon, true economy compels the husbandman as to his cattle, to keep in view and to *combine*, as far as he can, several objects in some degree incompatible with each other, and with the highest attainable degree of excellence in any particular

one of them. Few, for instance, could afford to breed cattle with exclusive reference to the *pail*, the *yoke*, or the *shambles!* For either of these objects a different breed would be taken, while, under all circumstances, for all these purposes combined, we should pronounce in favor of the *North Devon*. It is from this stock that the famous New England oxen are descended. Being of moderate size, and active and thrifty, they are adapted to a wider range of country; and being in itself an unmixed, distinct natural breed, if we may say so, it transmits and preserves its peculiar qualities with remarkable uniformity as to shape, size, color, temper and action; and without demanding, in order to keep them up to the mark, that practised skill and extraordinary care in the selection of the breeding stock which has been for many years exercised in the formation of some other artificial breeds, choosing for that purpose individuals in every case most free from the defects, and possessing the greatest number of the points which it may be the object of the breeder to establish.

In a correspondence between Dr. Mease of Philadelphia and some English stock-breeders of celebrity, one of them, Mr. Chandler, who had repeatedly gained prizes at Smithfield for the cattle he had raised or exhibited, says in his answer to certain inquiries—"Not being an advocate for very large animals or for feeding to an excess, I have endeavored from experience to make use of that description of animals which *pay best for the food they eat*, and are the readiest sale when fit for market. I have in consequence used the *North Devons*. They are the best breed that I am acquainted with for the united purposes of labor and feeding, being very active, fast walkers, quick feeders, of a very good quality when slaughtered, and of a size now very generally preferred in our markets to the very large beasts, being from one hundred to one hundred and fifty stone of eight pounds. They are worked in yokes from four to six to a plough, and *plough upwards of an acre per day;* indeed they *work harder than any other oxen in this country*, for Devonshire is a very hilly country. The Devonshire cows are not of a large size, but very handsome forms, quick feeders, and give milk of a very rich quality. I should suppose that a yearling bull would not be procured in either Devon or Hereford, from the first breeds, for less than one hundred guineas."

It is stated in the communications to the Board of Agriculture in England, vol. iv., that ten North Devon cows of Mr. Congon produced on an average five dozen pounds of butter per week in summer, and two dozen in the winter; or, in other words, two hundred and sixty-eight pounds per cow. His thirty cows averaged an annual profit of £13, 14*s.* 8*d.*, or $60·52 per head.

Another fact which weighs heavily in favor of the ox is, that his size is not diminished by labor; a consideration dwelt upon with emphasis by the late John Lowell of Massachusetts, eminent alike for his knowledge and for his public-spirited use of it. In a report in 1825, he remarks—"There was another very interesting fact disclosed on this examination. There were three fine five-year-old steers of Joseph Eastbrooks, two of which had been worked hard from the age of three, and the third had never had a yoke around his neck. The judges, and better judges there could scarcely be than my associates, could perceive no sensible difference in the value of the worked and unworked cattle of the same age, owned by the same man; and with the same treatment and food, the unworked oxen often were in no degree superior to those which had been submitted to labor. Great Britain might learn a lesson from this example, if her farmers could have been present."

Were it admitted, as perhaps it should be, that an ox will consume more hay or long provender than a horse, it must also be conceded that the horse

refuses much that will well sustain the ox—and the objection can at any rate only apply in all its force where the owner is near enough to market to send his hay for sale. Now as the grain-crop is more condensed in proportion to value, and admits of much easier transportation to market, the horse being the consumer, according to Mr. Stabler's calculation, of ninety bushels more of grain, is in that view and in that proportion the more expensive animal of the two. In a national point of view it is worthy of remark that he consumes too the very staple which goes most efficiently to increase and sustain the population and strength of a country; very few, perhaps, have reflected on the number of *people* who may be kept on the food of one horse. For example, the usual allowance for a slave is a peck of corn-meal and three and a half pounds of meat for a week, besides salt fish and vegetables; not enough, supposing the meat to be converted into hay, to keep the horse he drives for a single day.

Another view, which must not be overlooked, is, that the ox makes much more and *better* manure than the horse. He is, in fact, a much better machine for grinding down by his ruminating process into manure, all the provender which cannot be taken for sale from the farm. It is in few cases economical, often not even with hogs, to consume the *grain* on the farm; and of all things that eat it, not excepting poultry and pigeons, the horse is the most expensive, as he gives it back in no way but by his labor, and therefore is the last animal that should be kept when it *can be avoided.* We shall conclude this article in the next number, with such practical suggestions as to breaking, gearing, and management as may prove useful.

ON THE IMPROVEMENTS IN AGRICULTURE AND THE USEFUL ARTS,

THAT GROW OUT OF CONCENTRATION AND POPULATION.

THESE improvements are in nothing more obvious than in the use which has been made of *steam*, the great discovery and the great labor-saving power of modern times.

Go into a factory in the towns, where "men do congregate," and see the variety of purposes to which steam is applied, from the lifting of the tilt-hammer to the polishing of a needle. Then go in the fields of the husbandman and ask what it is doing for him. Almost nothing. Behold how perfect, how wonderful is the machinery employed in the conversion of the raw materials into the thousand forms that prepare them for use, in towns and factories where men readily combine all their powers, intellectual and physical; but what has steam yet done in the work of *production* of the fruits of the earth? Look at all the farmer's implements! The simple axe which fells a small tree, only after a thousand strokes—but only get that tree to the river shore, where it can be reached by the man who lives in a concentrated population; and see what *he* will do with it!

By steam, against wind and tide, you shall see him drag it on board his vessel, from which he delivers it again to the man of the town, who has invented a steam saw-mill to cut it up into planks of any thickness, even that of a wafer, and with a power and expedition over that of the secluded farmer's axe as 1000 to 1. This hitherto unwieldly block of timber, as it came from the hands of the countryman, (whose business has not been improved by the genius which concentration excites and rewards,) being thus in an instant ripped up into boards, you shall see each board passed with the speed of thought, and between planes that shave and groove and tongue it, and prepare it with perfect precision for the use of the carpenter and the

cabinet maker; and they again, if need be, with a labor-saving machine that looks miraculous, will cut the tenon and mortice, and the huge tree is thus, by the inventive arts that flourish wherever men can combine, sliced up and fitted for its final uses with mathematical exactness and the celerity of magic. Thus it is, farmers, with every thing else—where the policy of a country draws men together, there improvements of all sorts ensue, and the march of discovery is steady and rapid. The young men can afford to get married, and the daughters have no difficulty but to decide between rival admirers. Population increases and every thing prospers. But where the barbarous policy is to break up the useful industries—to send the products of the plough to foreign looms, to shut up the coal-pit and put out the fire in the furnace and scatter our population to the far West, to make *more* wheat and *more* corn and *more* meat, of all of which we have already a surfeit; and the stimulus to invention is withdrawn, and invention ceases, and with it improvement in all the arts, population diminishes, and nothing increases but ignorance, poverty, and old maids.

To show the wonderful difference in the contrivances for industrial purposes where men live wide apart and where concentration whets the genius —take, for example, your own field of Indian corn, or of wheat—your *farm* is your factory—yet how rude and comparatively inefficient are all your implements and appliances compared with those in the hands of the mechanic and the manufacturer, and hence how slow and laborious are all your processes, except such improvements as have been invented for you by mechanics —not in many cases, either, exactly for you, but to meet the more earnest and remunerating demands of the manufacturer and the commercial man, and only incidentally turned to your advantage.

Look at your axe, and your hoe, and your plough, and your scythe, and see how simple and how laborious in their form and their uses until the grain reaches your barn, where, as in Mr. Bolling's, and a few others, it meets the power of steam, not originally applied for your benefit or any stimulus offered by your *active and vigilant societies*, but to meet the sharp-sighted requisitions of men who live in concentrated communities.

Does anybody believe that if commerce or manufactures had needed a machine like Hussey's for reaping wheat, as agriculture has done since the time of Noah, that it would not have been perfected centuries ago? compare it with the thousand more complicated machines to serve the use of the arts pursued and practised in the towns—compare it with the machine for making cards!

Well, let us follow your wheat to the great merchant mill and see how incredibly expeditious and beautiful are all the operations it there undergoes, and yet how incomparably more expensive is the machine of production, than such as are employed in fashioning the natural products of the land and of agricultural industry—the timber tree or the grain crop.

Take, for instance, your 1000 bushels of wheat, manufactured with a year's labor on 100 acres of land, for which you would ask $2000. Then calculate the amount of manual labor in tediously ploughing, and harrowing, and sowing, and reaping, and threshing, and cleaning, and taking to market. If at the end of a whole year, one-eighth of the crop remains clear profit in your hands, it is more than many get, though they may not and *do not choose* to know it. See then the miller, with his light and comparatively inexpensive machine of conversion, when he takes your crop in hand, how he will in a few hours pass it through the mill—fan, grind, bolt, cool, and pack it, and after taking as much of it for the labor as you bestowed months upon it, he hands it over again to the merchant, who makes you pay again first for inspecting and then for selling it—selling it to the man who in Manchester

is weaving your wool—or your cotton—that is if you can there meet the competition of the commercial world in the markets of the world, as Governor Wright and the Patent-office Commissioner recommend we shall prepare and strive to do, instead of compelling the Manchester spinner to come and spin your wool and your cotton here in your own country, where he would be sure to eat your flour and your meat. And why not carry your wheat, and your corn too, to be ground in England, as well as your wool and cotton? If you want the miller here to take out a part of his toll in the corn he has need of, why not require the cotton spinner and ironmonger of England to come here and take of your cotton and wool a part of what is needed for them to wear?

How much better then, in a word, says common sense, how much more natural—more profitable to compel the loom to come to the cotton fields and the sheep pastures, and the lapstone to come to the hides, and the mill to the corn, and the anvil to the plough, than to force, as our wise tariff policy does, the planter and the farmer to be dragging their raw and bulky produce in all directions all over the world, to be fashioned for use by foreign capitalists who never buy our produce, even after it has encountered the expense of transportation across the ocean, unless we can work hard enough and live mean enough to undersell the half-starved pauper laborers on the Rhine and the Black Sea, who go half clad, and live on black rye bread called *pumpernicle*. Let then the policy which prevents concentration in the old States be called the *pumpernicle policy!*

ON THE CONSTRUCTION AND USE OF CARTS AND OTHER VEHICLES.

We know of few subjects of equal importance, that are so seldom and so superficially investigated by farmers, as the proper form, and structure, and material, of the conveyances employed for the transportation of manure and farm produce. Hence we deem it expedient to give the following.

In the employment of single-horse carts, as compared with double-horse carts, so great a saving, in some cases, of farm-work can be effected in carting as from twenty-five to thirty per cent.; and in leading out manure from the fold-yards, a saving so great as forty-four per cent. has been made. And I have also the authority of a thoroughly practical and highly enterprising farmer, who farms 2400 acres in Northumberland, employing sixteen pairs of horses—he formerly used no other description of cart than that drawn by two horses. He has become convinced, from practical experience, of the superior advantages attainable by the use of the single-horse cart, for, as his old stock wears out, he is now replacing in their stead single-horse carts; he informs me that he considers three horses, when employed in single carts, quite equal, if not superior, to four horses when employed in two double-horse carts. He is no theorist. I am told by another farmer, that he finds a saving of one horse in three when employing the single-horse cart. Should I be able to prove this to those who now employ two horses in a cart, that one in three, or even one in four, can be gained by the use of the single-horse cart, I trust this may be deemed a sufficient inducement, by those who have not yet adopted the single-horse cart system to do so. Lightness of cart is of considerable importance in the business of a farm. This is more particularly evident, when we consider that, by the use of the light single-horse Scotch cart (weighing from seven to eight cwt.) with the same strength of draught, one-fourth more work can be done in the same length of time, than can be done with the heavy double-horse cart commonly employed in this district,

(weighing from ten to twelve cwt.;) and as the use of the single-horse cart has been introduced to a very limited extent in this neighborhood, I shall, therefore, carefully endeavor to give a just estimate of the advantages derivable from the use of the single-horse cart, as compared with that from the double-horse cart. Practice and opinion are agreed in assigning a greater power of draught to one horse working singly than to any number harnessed together; for in proportion to the distance at which horses are removed from their load, so is the loss of power. This loss may be accounted for in three ways, viz.:—Distance from the object to be acted upon; horizontal line of draught; and diversity of pulling—for no one will dispute the fact that the nearer you can bring your horse to the point from which he draws, the greater power he will exert over it; that is to say, when he is at once attached to the body to be moved; because every exertion he makes is at once communicated to the mass, and therefore the horse produces more effect, because his force is applied immediately to the resistance. Again, in a horse drawing in a horizontal position at slow paces, there is a loss, I believe, varying from one-fifth to one-sixth of his power; and as it is known that a horse can apply his strength to the greatest effect and advantage when the line of draught is from the point of his shoulders to his hocks, (which is an angle of eighteen degrees,) as in the case of the line of draught of the plough. Again, the diverse pulling of either horse greatly embarrasses the effects of the other, for seldom is it, indeed, that you see two horses so equally matched in temper, pace, and size, that they at all times take alike an equal and continued share of the burden, for as it too frequently happens, that good horses have license to work themselves to death, whilst an old knowing one has leave to act the rogue. It will be generally admitted, I think, that a horse can exert his powers with the greater ease and effect when working singly than when he draws in conjunction with another; for when alone he has nothing but his load to contend with, whereas when he draws in conjunction with another he is greatly embarrassed by some difference of pace, the horse before or behind him being quicker or slower than himself, and he is frequently incommoded by the greater or lesser height of the other. The shaft horse has a double share of the work, and frequently the duty of both horses imposed upon him to perform; for, when turning, the whole exertion is required of him, and in descending hills he has the retarding of the two horses' load, and as we occasionally, but not unfrequently see, at the same time, the trace horse pulling, thereby increasing the already over-taxed exertions of the horse in the shafts; and these are no over-drawn statements, as such scenes may be observed every market-day in this town, in two-horse carts laden with corn descending such a hill as Dean-street. Again, in ascending a hill, should either horse relax his draught, the other horse must of necessity tax his powers to twice their natural extent. Such are a few of the disadvantages attending the use of double-horse carts. The use of the single-horse cart has been introduced into this neighborhood to a very limited extent; but I trust I shall be able to show, by comparison of the statements of others, combined with my own practical experience, extending over a period of five years in Berwickshire, and the northern parts of Northumberland, the undeniable advantages it possesses. As an example of the advantages of single-horse carts over double-horse carts, I shall quote the authority of a well-known agriculturist of this district—a member of our own club, whose absence from home, I regret, prevents him from being present. He, in writing to me, says—in using single-horse carts, on a farm employing six horses and three men, in leading out dung to the distance of a mile from the fold-yard, six carts, two men filling in the fold, and the other spreading and

shaping dung-hill, four boys or girls driving, will each go twelve times, carrying one ton each time—the expense of which will be—

Three men, at 2*s.* 6*d.*	7*s.*	6*d.*
Four drivers, at 1*s.*	4	0
Six carts, at 3*s.* 6*d.*	21	0
Leading out tons 72)	32	6
	0	5¼ per ton.

Then, using double-horse carts, according to the system usually followed in this neighborhood, each man fills, teams, and spreads his cart of dung, leading to the distance of one mile, will go nine times, carrying twenty-five cwt. each time. The expense will be—

Three men, at 2*s.* 6*d.*	7*s.*	6*d.*
Two double carts, at 6*s.* 6*d.*	19	6
Leading out tons 34)	27	0
	0	9½ per ton.

	£	*s.*	*d.*
The cost of leading a dunghill of 300 tons one mile, with double-horse carts, at 9½*d.* per ton	11	17	6
The cost of leading a dunghill of 300 tons one mile, with a single-horse cart, at 5¼*d.* per ton	6	11	3
Showing a difference in favor of single-horse carts of	5	6	3

Single-horse carts to lead out the above will require 4½ days.
Double do. do. do. do. 8¼, or nearly 9 days.

By the above calculation the difference in favor of the single-horse carts amounts to forty-four per cent.—a large sum certainly; and, from the above details, I think it will be conceded that the trace horse is not of any service. I can only say that when I came to ——, I had several double-horse carts made, but we used them indiscriminately with the single ones, finding that one horse could draw as much dung as could be placed on the cart, which amounted to about one ton. At the same time, were we considering the leading of short manure from a town, we must calculate that the single-horse cart will carry one-third less than the double-horse cart; but then, again, we expect that a man will have the care of two single-horse carts, so that they, even on this ground, are preferable to the double-horse cart. Then, again, as regards the time required to carry the aforesaid dunghill, there is two to one at least in favor of the single-horse carts. And we all know of how great importance this is in fickle seasons—such as we must always expect in these northern latitudes. Again, in a letter from a gentleman, resident in Berwickshire, an intelligent and an enterprising agriculturist, he informs me, "that his loads are, to Berwick generally, and with return carriage of coals, 3 quarters of wheat, 3½ to 4 quarters of barley, 4½ quarters of oats, and we never load heavier than 16 cwt. of coals, the distance to the pit and back again being 39 miles, and the pace at which my horses travel from 3 to 3½ miles per hour, but on good roads with short distances I would have no hesitation of putting on a load of 18 to 20 cwt., and this can be done with less distress to the horse than when working double and conveying one-third load less in quantity and weight." I believe more than 20 per cent. is lost in driving on the road. I am informed by a gentleman residing in the northern part of this county that the usual loads of double and single-horse carts are as follows:—

	Single-horse carts.	Double-horse carts.	Two single-horse carts.
Oats	18 bolls (36 bushels)	24 bolls (48 bushels)	36 bolls.
Barley	15 "	20 "	30 "
Wheat	12 "	18 "	24 "
Coal	9 "	12 "	18 "

From the above table you will perceive that with single carts two horses

are capable of doing nearly or quite as much work as three horses in double carts, that ten single horses can convey to market 180 bolls of oats, while it would require fifteen horses in double-horse carts to accomplish the same end; an immense saving in favor of single-horse carts in an economical point of view; and in harvest work, on level farms in dry weather, three single-horse harvest carts will convey into the stack-yard as much hay or corn in sheaf as two double-horse carts. First, then, I shall describe the one-horse Scotch cart, such as I employ on my farm; and next, the double-horse cart, commonly used in this district. And I shall attempt to point out some of their relative merits, advantages, and disadvantages in point of construction. The single-horse cart, of which there are two varieties, viz., the coup or tilt, and dormant or whole-bodied cart. The one-horse coup or tilt cart.—The body of the cart, with its bolster or cods, rests upon the axle, and to which the shafts are joined by means of a joint iron rod that passes through the bolsters at the ends of the shafts. The shafts are secured to the body by means of the lock at the front end of the cart, which fastens the body to the slot-sheath or cross-beam joining the shafts. The side boards, or top sides, are fitted so as to take off at pleasure, as required. On withdrawing the bolt at the front end of the cart, the fore part of the body rises up from the shafts, while the other end sinks, and so allows the load to be deposited on the ground. The price of such a cart as I have described is 10*l.* 10*s.*, and the weight 8 cwt. This cart, I find, in practice, the best adapted for the general purposes of husbandry, owing to the great facility afforded by the body being movable, in at once discharging its load. This point is one of considerable importance where loads of earth, lime, or stones are to be conveyed only for short distances, and the whole load deposited at one place and time; but, on the other hand, the disadvantages arising from the body of the cart not being immovably fixed to the shafts, as by the description before given. It will be remembered that the body is fastened to the slot-sheath by means of a lock, consisting of a bolt and eye. These, in time, wear the bolt smaller, and the eye larger; consequently there is a degree of motion between the shafts and the body, which interferes with the motion of the horse; and it will be allowed that it is injurious wherever there is any movement between the body of the cart and the shafts,—as, for instance, carriages that are hung on C springs are notoriously the worst to pull, and are in the stable expressly called horse murderers—requiring heavy powerful horses to drag them, while lighter animals are able to drag much greater weights in carriages that do not admit of this motion. This objection is obviated, as will be seen by the description I shall give of the dormant-bodied cart, to which I give a decided preference, where the produce of a farm and the leading back of manure are to be conveyed a distance of many miles. The body is fixed immovably to the shafts or blades, and the horse pulls at once to the shafts, which are fixed immediately both to the load and to the axle-tree. The dormant-bodied cart has its body similarly constructed to the coup cart, excepting the shafts and bolsters. The cart requires no bolsters, but, instead thereof, the shafts are prolonged backwards, taking the place of, and serving most of the purposes of the bolsters, the body being immovably fixed to the shafts. The price of this cart is 10*l.*, weighing from 7½ to 8 cwt. For conveying loads long distances, this cart is infinitely superior to the coup cart. The greatest disadvantage attending their use arises from the extra trouble experienced in discharging a load from them, as, at each time, the horse has to be loosened to permit emptying the load. Those carts seemed to be very generally used among the railway contractors now employed in this town, and in their business, dispatch being of consequence, their using this description of cart

argues that the advantages gained in other respects must be found sufficient to compensate for the loss of time which may arise from the body being immovably fixed to the shafts, as I previously described. Any loss of time, I freely allow, is a disadvantage attending the use of this cart; but where the discharging of a load is only required twice or thrice in a day, as in the leading of manure from town, this loss of time is not quite so serious a matter. But in the formation of manure heaps of straw dung, there is a method which is now practised by some farmers of not driving the carts on to the manure heap, and there couping the load, but of throwing all straw manure lightly up from the cart on to the manure heap; for, says an intelligent farmer, in a letter to me, "I do not approve of the system of couping up straw manure, or even drawing it out with an implement called a muck-hawk." All straw dung should be griped and thrown lightly up. The bodies of each of the carts I have just described can be lifted from off the axle and wheels. Of the harvest or Scotch corn cart, which consists of open frame-work with boarded bottom, it is light and cheap in construction, and can carry a bulky load. It is chiefly used for the purpose of carting hay, straw, corn in sheaf, or similar bulky materials. It is a more efficient vehicle than the coup cart and hay frame. "Of the double-horse coup cart, which is so universally employed in this district, it will be unnecessary for me here to give you any description, as all must be so well acquainted with its construction. A statement of the price and weight, I trust, will therefore be deemed sufficient. By an estimate I have received from a well-known country cartwright in this neighborhood—

The cost of a double-horse coup cart is . .	£14.
Weight ditto .	10½ to 11 cwt.

You will be likewise fully acquainted with the construction of the double-horse long cart used in this neighborhood for carrying hay, straw, &c. By above estimate—

The cost of long cart is	£15.
Weight ditto	11 cwt.

I, however, am informed by a cartwright of this town that his prices are as follow—

The cost of double-horse coup cart . . .	£17 10
The cost of long cart	20 0

Fearing you may think the latter estimate above an average, in making my calculation of the comparative statement of cost of single and double-horse carts, I have taken the former. On a farm employing three pair of horses it would require—

With single-horse Carts.

Two	single-horse	coup carts, at 10*l.* 10*s.* . .	£21 0
Four	ditto	dormant, at 10*l.* . . .	40 0
Three	ditto	long carts, at 3*l.* 10*s.* . .	10 10
			£71 10

With double-horse Carts.

Three	double-horse	coup carts, at 15*l.* . .	£45 0
Three	ditto	long carts	42 0
		Total . .	£87 0
		Deduct single-horse carts . .	71 10
		Saving . .	£15 10

Three additional cart saddles and breechings would be required when single-horse carts are employed, so that you will perceive that in adopting the single-horse cart system there is even a saving in the outlay of capital.

THE VALLEY OF THE MISSISSIPPI.

We are indebted to the author, Hamilton Smith, Esq., of Louisville, for an exceedingly instructive pamphlet on "the advantages offered by the West, and particularly by the country on the Lower Ohio, for manufacturing," and now desire to call to it the attention of our Southern and Western readers. Mr. Smith desires to see the loom and the anvil take its place by the side of the plough, and he furnishes numerous calculations with a view to show the enormous waste that occurs when they are separated. He says, and most truly, that—

"It would astonish one who has never thought of the subject to calculate the amount of fixed capital expended in grading an uneven site of a city, and in its buildings. The filling up of our ponds and cutting down of our sand-hills has been but a mere trifle when compared with similar expenditures in other cities.

"The splendid Quincy market-house in Boston, and the immense blocks of granite warehouses around it, now stand where ships once anchored; millions of dollars have been paid by New York for the timber and lime of Maine, the granite of Massachusetts, the sandstone of Connecticut and New Jersey—and she has even been obliged to send to New Hampshire and Maryland for brick.

"The very cost of transportation on the building materials already sent to New Orleans from New England and the Ohio river, would, at many points on this river, build a large manufacturing town, and furnish it with a working capital."

And who are the paymasters for all these enormous expenditures? Are they not the farmers and planters of the Union? When the planter sends away five bales of cotton and obtains in return one bale converted into cloth, by aid of the light and easily transported machinery of a cotton-mill, is he not taxing himself largely towards grading the streets of New Orleans and New York, and building the market-houses of Boston and Manchester? When the farmer sells his corn from his farm at 15 to 20 cents, that it may be eaten at Manchester at the cost of a dollar or more, and is paid in labor applied to the conversion of his wool into cloth, receiving in return for a dozen bushels about the same quantity of labor that he has given to the production of a single one, are not he and his neighbors contributing towards the making of roads and mills for others, as much labor as would give them roads and mills for themselves? When he sells his corn to be eaten abroad, does he not lose the manure and exhaust his land? When it is eaten at home, does he not save the manure and enrich his land? That he does all these things is unquestionable, and equally unquestionable is it that the loss to the farmer and planter *in manure alone* is more than the price he pays for all the clothing consumed on his land.

"On the banks of the Ohio and its tributaries we have," says Mr. Smith, "*all* the *natural* elements of a manufacturing district: cheap fuel, cheap living, cheap land, cheap stone, clay, and timber, cheap raw materials, cheap transportation, in a healthy country, in the centre of a great market; and besides, we have good laws and light taxes."

To enable the people of the West to avail themselves of these advantages there is required—

"The association of capital, protected by liberal charters, and under the management of Superintendents of high character, Overseers carefully selected, and Directors in whom the public have entire confidence.

"This system, which has worked so well elsewhere, is worthy of our adoption; wherever it has been tried the results have been the same; it has stood the test of a quarter of a century, and it does not require the gift of prophecy to predict the same result here.

"It is admirably adapted to our institutions and the character of our people.

"It is the *democratic* system,—for by it the hundred dollars of the poor man, invested in the stock of the corporation, draws as large a dividend as the hundred dollars of the rich man: it is the system *safe* for the public,—for it requires at the outset a capital sufficient for its purposes and asks no credit; and safe for the stockholder, as he only risks his stock and cannot well be ruined by the mismanagement or knavery of associates; this is the

system which gives surety to the operative for his wages, and to the agriculturist for the price of the food furnished by him to the operative; and the results of its adoption here will be seen in lessening the cost of fabrics our necessities require,—in increasing the amount of our productive capital,—in enlarging the number of profitable employments of our young men of capital and enterprise, and in giving us an important home market for our raw materials and provisions.

"The way in which this system works, and *why* it works well, will be seen hereafter; but under it, as perhaps every reflecting man will admit, the west has already abundance of capital for the purpose. It is not expected that our very rich men will leave their comfortable homes for new positions where there are peculiar natural advantages and where manufacturing can be made most profitable; or that they will personally superintend the details of making cotton or any other fabrics; nor can it be expected that they will risk the earnings of years to the management of a distant co-partner or agent.

"To manufacture cotton, or indeed any other great staple, at the most profit, we must do a large business; the cotton mill of 10,000 spindles will make goods probably ten per cent. cheaper than one of 1000 spindles; the first requires a capital of, say $200,000; now it would be preposterous to make the attempt to get a Lexington capitalist to furnish that large sum of money to any man or for any purpose, however great the "paper profits" might appear, or however strong might be the faith of the capitalist in the general profits in the business proposed: it would be equally preposterous to ask two hundred men to contribute $1000 each, and also their individual skill and labor, to any co-partnership concern. But, if you start twenty mills under the guardianship of the same men who so satisfactorily manage our Bank and Insurance capital, and under the direct superintendance of a man of unquestionable capacity and integrity, and with the checks of Treasurer, Overseers, &c., where there is no liability beyond the capital invested, and where the stock promises large dividends, you will find the rich man taking his risks in each mill; while the man of less capital will follow the example to the extent of his means. They who construct the buildings or furnish the materials and machinery, and they who wish to sell the goods or obtain employment in or about the mill, will be glad to take all the stock they can afford to hold. Labor and materials to a considerable extent will be equal to money.

"It is said that steamboat capital does not, on the average, pay 8 per cent. per annum—yet how easy is it, on any point of our river, to start a boat costing from thirty to fifty thousand dollars—in this the shares are rarely over 1-16—but in a cotton mill each share would be, say 1-2000. The boat owners are the builders of the hull and the engine, the officers and the commission merchant; would it not be far easier to raise the capital of the mill and partially in the same way, with anticipated profits of twenty to forty per cent., and in a business attended with less risk and giving constant employment, and at the same place? Let those who scorn small contributions to great works remember that most glorious of all monuments, the Polish mound, made by a grateful people, of whom each contributed but a spadeful of earth—or the more recent instance of the subscription of half a million of dollars by Irish laborers, which ensured the completion of the western railroad from Boston to Albany.

"It is believed by many that there has been an increase of specie capital in the Mississippi valley since 1836 of nearly one hundred millions of dollars, and that its annual increase is from ten to fifteen millions. It is said by those who have the best means of knowing the facts, that something like five millions of specie are annually brought into the west by European emigrants. Some shrewd calculators make the exports of Indiana and Illinois over their imports from six to seven millions of dollars per annum. It will be remembered that the government does not now drain us of specie through its land offices, and that we are now nearly freed from eastern land speculators. Our independence is shown in the strength of our banks and the favorable state of our domestic and foreign exchanges. In the interior, the rate of interest has fallen to six, and in some sections to five per cent. per annum: while in our cities and large towns our banks furnish all the facilities desired for legitimate business transactions.

"We have so long been dependent on the east for money capital, that it is difficult for us to look for it in any other direction. We have now sufficient strength to stand erect, but have scarcely learned the use of our feet.

"But, perhaps, we are to look to the south for capital, either in money or its equivalent cotton. The cotton planter for years has been chagrined that he has made less in producing than the New Englander has in manufacturing the cotton; and he will gladly avail himself of the opportunity, now perhaps first presented to him in a practical shape, of making the manufacturers' profit. He could not manufacture in Glasgow and Manchester; and Lowell was too far distant for him to invest in her mills. At home he has not the labor, power, conveniences or skill. The lower Ohio is within his reach, (I refer o the planters on the Mississippi and its tributaries.) Here he can, while overlooking

the management of the mill, mingle business with pleasure during the summer. Many may smile at the idea of getting surplus capital from a cotton planter, and may exclaim, mortgages, execution, advances, &c.; yet let me assure such that the south-west is in quite a different condition now from what it was ten years since. Let them remember that not only has the cotton crop vastly increased in that period, but that the facilities for obtaining credits in New Orleans have been greatly diminished, while at home there are now comparatively no such facilities. Many of the planters now consign their crop to Louisville, Cincinnati, Pittsburgh, the eastern cities and even to Liverpool, and neither ask nor wish for an advance. Let it also be remembered that the cotton planter has nothing at home to invest his surplus in, save more land and slaves. He has no canals or railroads, houses, or ships to build; he has no banks to deposit his money in even; he does not wish to take mercantile risks or to leave his money long in the hands of those who do take such risks; would he not gladly invest in mills near him, where his own cotton would be spun and woven, and on its way to market and on his way to the springs or his summer residence? Indeed, he might find a healthy summer residence within sight of the mill. He would realize the value of his cotton (indeed trebled in value) from the goods before he could get his return from that consigned to the Liverpool factor.

"This direct consignment is, of course, the most favorable for the planter. When the New Orleans or New York speculator buys the cotton and consigns it, the planter of course pays, or rather loses, the intermediate profits.

"On this reliance on the south I have not only to state its reasonableness, but the positive assurances of very many planters who have surplus capital, that they and their friends are ready to take stock in cotton mills just as soon as they, who practically understand the details of putting up and managing mills, will obtain the charters and superintendents and contractors.

"But we cannot expect cotton mills to leap into existence at once. Several years will be required to erect buildings, obtain machinery, &c. Then the first that are started will make profits to build others; besides, the moment we show the east that we have systematically and energetically undertaken to manufacture our cotton and hemp, and to eat our corn and pork at home, the building of new mills there will be checked, and the men of capital and enterprise there, who wish to engage in the business, will bring their capital, skill, and labor here.

Agreeing, as we do, with our author, in every word that he has said in regard to the advantages to be derived by the West, and by every portion of the Union, from the establishment of mills and factories, furnaces and rolling-mills, at which the labor and the food, the cotton or the wool, the coal and the iron ore may be combined together for the production of cloth and iron, we find ourselves, nevertheless, constrained to differ entirely from him in regard to the views contained in this closing sentence. Between the various portions of the Union there are no opposing interests. The man of Massachusetts or Connecticut is not to be the loser because the Georgian or the South Carolinian becomes a manufacturer of cotton, nor is the Pennsylvanian to suffer because the Missourian converts into iron his inexhaustible supplies of ore. On the contrary, all are to be enriched by the same process. The more coarse cloth manufactured in the South and the West, the greater will be the ability of Ohio and Kentucky, Georgia and Alabama, to consume fine cloths, and with every step in this change the freight becomes a matter of less and less importance, while with each the taste and skill resulting from long practice become more important, enabling their possessor to obtain increasing reward for his services. The direct effect of the establishment of factories at the South and West will be that of converting the existing manufacturers of the North and East into producers of the finer articles for which we are now entirely dependent upon the mills of France and England, and therewith will arise a demand for skill of a far higher description than any now required, offering constantly increasing inducements for exertion, and tending largely to promote intellectual improvement. The more rapid the increase of penny newspapers, and in the demand for primers, and spelling-books, and grammars, the greater will be the demand for newspapers of a higher character, for magazines, and for literature of the highest order. Ohio now manufactures her own school-books, yet she purchases from Boston, and New

York, and Philadelphia, more books of a superior order in a week than she consumed in a year, at the time when there was not a book-printing press within her limits.

We are fully aware that many of the manufacturers of the North look with jealousy upon the tendency towards the erection of cotton mills now existing at the South, but it is a feeling as short-sighted as that which prompts the planter to look coldly upon the progress of Lowell or of Providence. Every mill that is built in the South and West tends to increase the value of property at the North, and every one built in the North tends to increase the value of the farms and plantations of the West and South. Every furnace built in Ohio or Tennessee tends to increase the value of the coal mines of Pennsylvania, and every mine that is opened in the latter tends to increase the value of the farms of Ohio and the plantations of Tennessee. All men prosper by the prosperity, and all suffer by the misfortunes, of their fellow-men, and although cases sometimes occur where the reverse appears to be the case, careful examination will show that the gain from the misfortunes of others is only apparent, while the loss is real. The famine of last year was productive of great apparent gain. We realized from sales of grain to the starving people of Europe some twenty millions of dollars more than we should otherwise have done, but we lost almost as much in the price of cotton, and therefore, even had the account remained as it stood a year since, we should have gained nothing. It has not, however, so remained. The famine contributed largely towards stopping the railroads of Europe, and that reduced the price of iron, and that is now, in its turn, closing the furnaces and rolling-mills of the Union, and driving the laborers and miners and furnacemen to the West, there to become producers of food. The farmer loses his *customers* for the bulky commodities that will not bear transportation, with a certainty that they will soon become *rivals* in the production of wheat, and rye, and Indian corn, and is therefore doubly injured. The famine diminished the power of the people of Great Britain and Ireland to purchase cloths, the consequence of which is, that our markets have been flooded with foreign cloths, and our cloth and flannel mills have been closed, and thousands of workmen and workwomen have been discharged, to the great injury of the farmer who is seeking a market for his food and his wool. Were it possible to furnish an accurate account of the effects of that famine upon the people of this country, we feel assured that every planter and farmer would unite with us in saying that there is a grievous error in a system which compels us to pray for bad crops abroad, to be followed by the starvation of our fellow-men, in the hope that we may thereby obtain a market for our surplus food, and that it is an error tending to serious deterioration of the moral feeling of the community. The remedy for that error is to be found in offering inducements to the workmen of Europe to come with their looms and anvils and take their places by the side of the plough and the harrow, eating their food on the ground on which it was produced, giving back to the land the refuse of its products, and giving to the cultivator of the land, day's work for day's work, and relieving him from the necessity for giving the labor of a dozen days applied to the *production* of corn or wool in exchange for that of one or two days applied to their *conversion* into cloth, as now he does. Let the planters and farmers of the Union set their shoulders to the wheel, with a determination to bring the consumers of food and cotton to take their places by the side of the producers of food and cotton, and the day will not then be far distant when they will all unite in prayer to the Great Giver of all good things, that the labor of their fellow-men throughout the world may be rewarded by large returns, enabling all to enjoy the same abundance that has fallen to their own happy lot.

WHAT CONSTITUTES A THOROUGH-BRED HORSE.

In the first place, it may be observed, there has been a great deal of discussion in various publications on Sporting, but to very little purpose, on the much agitated question, "What constitutes full blood, or, what is termed, a thorough-bred horse?" We consider this question as very easily decided; the term "thorough-bred horse" merely implying one that can be traced through the Stud-Book, by sire and dam, to any Eastern stallion, or to what were called the Royal Mares, imported by Charles the Second, as they, together with two or three of the first imported stallions, form the *ne plus ultra* of all racing pedigrees. As to the assertion, that, for a horse to claim the title of thorough-bred it is necessary he should be of pure Oriental descent, it cannot for a moment be supported; as, independently of the fact, that only two mares are stated in the Stud-Book, or elsewhere, on authority, to have been imported into England, in the early days of racing, it is well known that the first British race-horses were those of British breed, changed, ameliorated, and, at last, perfected by the admixture of Eastern blood, and judicious crossing afterwards.

The effect of what is called crossing blood is as follows: The first cross gives one-half, or 50 per cent.; the second 75 per cent.; the third 87½ per cent.; and the fourth 93¾ per cent. In sheep, after this, if the ewes have been properly selected, the difference in the wool between the original stock and the mixed breed is scarcely perceptible; but with the horse, the breeder must not stop here, if he means to produce a race-horse: and a curious fact is stated respecting sheep, on the authority of the Count Veltheim, of Brunswick, an extensive breeder of that species of stock. "It has frequently occurred to me," says he, "that rams, which, after an improvement of four or five descents, have rivalled all the *visible* qualities of the purest Merinos, when employed in propagation, have got very ordinary lambs, and consequently they are not fit to be used for breeding. On the other hand, a fact may be stated, wherein, after a very opposite cross, pure blood, with evident improvement upon the original stock, was procured on the eighth descent. The late Lord Orford, very celebrated for his greyhounds, finding them degenerating in courage, crossed his best bitches with a bull-dog. The result was, after several re-crossings with pure blood, that breed of greyhounds for which he was so eminently distinguished. The immediate descendants, however, of the Eastern horses, have, almost without an exception, proved so deficient of late years, that our breeders will no more have recourse to them, than the farmer would to the natural oat, which is little better than a weed, to produce a sample that should rival that of his neighbors in the market."

Much speculation has also been indulged in, as to the effect of close affinity, in breeding the race-horse, or what is called breeding in-and-in; a system which has eminently succeeded in breeding cattle, and also with Lord Egremont's racing-stud. Beginning with Flying Childers, several of our very best racers have been very closely bred; and it certainly appears reasonable that, as like is said to produce like, if we have high form and superior organization in an own brother and sister, that high form and superior organization would be very likely to be continued to their incestuous produce. In a work called "Observations on breeding for the Turf," published a few years back, by Nicholas Hankey Smith, who resided a long time among the Arabs, the author gives his opinion, that colts bred in-and-in show more

blood in their heads, are of better form, and fit to start with fewer sweats, than others; but when the breed is continued incestuous for three or four crosses, the animal, he thinks, degenerates. By breeding in-and-in, however, he does not insist upon the necessity of breeding from brother and sister, or putting a mare to her own sire, or the sire to his own dam; but after the first cross, to return to original blood. A recent proof of the good effect of a close affinity in race-horses may be found in the produce of the dam of his late Majesty's favorite mare Maria. By those celebrated stallions, Rubens and Soothsayer, they were worthless; but by Waterloo and Rainbow, grandsons of Sir Peter, and thus combining much of her own blood, they would run to win.

CHOICE OF STALLIONS AND MARES.

We now come to the most certain source of producing good racers, namely, the choice of stallions and mares, and the treatment of the produce in their colthood. But as regards the two first-named requisites, reference must be had to the parts of the country in which horses are intended to run. If for the short races of Newmarket, so much the fashion of the present day, a differently formed animal would be required to one intended to clear his way on the provincial courses. But whether it be one description of a race-horse or another, although the laws of nature are not always certain, a proper junction of shape, or similarity in formation of horse and mare, together with a due regard to blood, gives the fairest prospect of success. We admit it is difficult to account for the degrees of excellence between the running of two full brothers or sisters, where it does not arise (a common case we conceive) from some violence or impression on the womb, when the fœtus is in a soft state, or from a decline in the constitution of the mare, subsequent to her last produce; but when we find the produce of two highly-bred animals, both apparently well formed and sound, and with a proper admixture of blood, unable to race, we can attribute it to no other cause than a dissimilitude of parts in the horse and the mare, or a similitude of some parts tending to an extreme in both. Without going so far as to assert that there is no innate quality in blood, we may safely pronounce it so far from being, as some have supposed it to be, independent of form and matter, that, unless accompanied with suitable form and action, it is of very little value in a race-horse. "Sometimes," as Sancho says, "we look for one thing and find another;" but we know of no instance of a bad, misshapen horse, and a bad, misshapen mare, however highly bred, producing good runners.

The first and most important point in the choice of a brood-mare for a racing stud, is the soundness of her constitution and limbs; although, of course, it is desirable she should be of good size and shape, with substance. How highly soever she may be bred, and however well she may have run, if she have not a sound frame, she cannot be depended upon to breed racers. If she have never been trained, of course the risk is increased; but, in either case, her form and action must not be overlooked, as it too often is, rendering the breeding of thorough-bred stock a mere matter of chance. Should she have appeared in public, her racing capabilities are to be consulted. For example, if pace (speed) was her best, as the jockies say, a stallion should be selected, who, by the known stoutness of his running, is likely to tie her produce to pace, or, in other words, to give them both speed and endurance in a race. Her frame should be roomy, or her produce will be apt to be small, although, it must be admitted, there are exceptions to this rule. She should be of, what is termed, fashionable blood; for, if she be not, and

her produce should come to the hammer, *previous to trial*, they would prove utterly worthless in a market.

It cannot admit of a doubt, that it is trespassing on the powers of nature, to expect a mare, or any other female animal, to nourish her fœtus, in embryo, so perfectly during the time she is giving suck, as if she were dry or without milk. Nevertheless, it is customary to put all blood mares to the horse the ninth day after foaling, and it is almost too much to expect that the owners will let them lie fallow, although they may in some measure resemble the man who cut up his goose to get at the golden egg. During the period of gestation, however, the thorough-bred mare should be highly kept. All animals well fed, produce their species of a superior description to those which are not well fed; and nothing more forcibly shows the beneficial effect of warmth in rearing superior varieties of the horse, than that the half-starved horse of the Desert should be as good as he is even now found to be.

In a racing-stud, the period of putting mares to the horse is much earlier in the year than that of any other sort, by reason of their produce being almost always called upon to go into work before they are two years' old. In fact, they can scarcely be dropped too soon in the commencement of a new year, where proper accommodations are provided for them. A peep into the three volumes of the Stud-Book will satisfy inquirers into these matters, that some mares have produced more than twenty colts and fillies, and, in a few instances, the greater part of them proved good runners; but, we should be inclined to think that the average would not exceed six, as the produce of each mare.

Virgil, in his excellent remarks on breeding horses, tells those of his readers who wish to gain a prize, to look to the dam; and, until of very late years, it was the prevailing opinion of Englishmen, that, in breeding a racer, the mare is more essential than the horse to the production of him, in his highest form; and we know it to have been the notion entertained by the late Earl of Grosvenor, the most extensive, though not perhaps the most successful, breeder of thorough-bred stock England ever saw. The truth of this supposition, however, has not been confirmed by the experience of the last half century, and much more dependence is now placed on the stallion than on the mare. The racing calendar, indeed, clearly proves the fact. Notwithstanding the prodigious number of very highly bred and equally good mares that are every year put to the horse, it is from such as are put to our very best stallions that the great winners are produced. This can in no other way be accounted for, than by such horses having the faculty of imparting to their progeny the peculiar external and internal formation absolutely essential to the first-rate race-horse; or, if the term "blood" be insisted upon, that certain innate but not preternatural virtue, peculiarly belonging to some horses but not to others, which, when it meets with no opposition from the mare, or, in the language of the stable, when "the cross nicks" by the mare admitting of a junction of good shapes, seldom fails in producing a race-horse, in his very best form. It is obvious, then, that owners of racing-studs should not hesitate at paying the difference between the price of a first-rate stallion and an inferior one; and there is always one of the former to be found, to suit every description of mare. Breeders of all kinds of horses, but of the race-horse above all others, scarcely require to be cautioned against purchasing, or breeding from, mares, or putting them to stallions, constitutionally infirm. By "constitutionally infirm," is chiefly implied having a tendency to fail in their legs and feet, during their training, which too many of our present racing-breed are given to; although the

severity of training is not equal to what it was some years back. It would be invidious to particularize individual sorts; but we could name stallions and mares, from which the greatest expectations were raised, whose progeny have sacrificed thousands of their owners' money, entirely from this cause. It having been clearly shown, not only in theory but in practice, that the diseases and defects of horses are for the most part hereditary, we may be induced to give credit to the assertion, that the Arabians, after having brought their breed of horses to the highest pitch of improvement of which they themselves considered them capable, have preserved their chief perfection, namely, great endurance of fatigue, with highly organised matter, and natural soundness of limb—by restricting the use of stallions until approved of by a public inspector of them. Indeed, in several European states, similar precautions are taken, and stallions are provided by their governments, for the use of farmers and others who breed horses, and care is taken in the selection of them to avoid all such as have proved naturally unsound, or been affected by any disease, the influence of which may be hereditary. No part of veterinary pathology is more interesting than that which relates to the hereditableness of disease; and, as an eminent French writer, (Professor Dupuy,) on the veterinary art, observes, "That person will render an important service to his country, and to rural economy in general, who may show, by incontestable evidence, that those organic diseases (farcy and glanders) are very often hereditary. I knew a mare whose body on dissection presented every appearance of glanders; her filly died at the age of four and a half years of the same tuberculous affection. The other offspring of this mare inherited her particular conformation, and her propensities to bite and kick." The Professor produces three similar instances of inherited disease, all of which, he says, were too evident and well-marked to admit the possibility of any serious mistake, and were attested by the professors of the Veterinary School at Alford. Similar observations follow in relation to the diseases of oxen, cows, sheep, and swine, as also of ophthalmia in horses, all of which are transmitted from one generation to another, the effect of hereditary influence. "These considerations," continues the Professor, "to us are of the greatest moment, since we have it in our power, by coupling and crossing well-known breeds, to lessen the number of animals predisposed to these diseases. Acting up to such ideas, our line of conduct is marked out. We must banish from our establishments, designed to improve the breed, such animals as show any signs of tuberculous disease, or any analogous affection. Above all, no stallion should be allowed to remain in a wet or cold situation, in consequence of the evils likely to result therefrom."

In consideration of the preference given to the stallion over the mare, in the propagation of racing-stock, may be quoted the following passage from Perceval's Lectures on the Veterinary Art, (London, 1826.) "It might be supposed that the part the male takes in fecundation is comparatively a very unimportant one; it must be remembered, however, that the copulative act is the essential first cause; that therein the action of the organs is natural and sympathetic, and that the result is the generation of a new animal bearing a likeness to one or both of the parents; from which it would appear, although the physical part of the male is simply to project the sperm into the female, who alone has the power of rendering it efficacious, that the influence of the sperm is much greater in the generative process than we seem to have any notion of, or at least than we have been able to reveal the nature of in physiology."*

* Lecture 59, On the Physiology of the Organs of Generation, Male and Female, p. 94.

SHEEP IN ENGLAND AND SHEEP IN AMERICA.

LOOK AT THE DIFFERENCE.

We lately gave some account of the sale, or rather of the attempt to *sell*, not to "*let for the season*," but to sell, Mr. Reybold's superb lot of yearling rams. A few of which went off at from $40 to $60. Now look at the following account of the annual letting of Mr. Webb's South-downs in England—sixty-seven rams let before dinner, for the season, at an average of $125—three choice rams let at an average of $300 each, and many others were hired at prices varying from $150 to $225 each! Behold, farmers, the effect of a policy that encourages home industry, increasing the number of *consumers*, alongside of the plough, to devour the products of the plough!

We shall give this account more at length, in reference particularly to the notice taken of our much respected and worthy countryman Mr. Colman, and his speech in reply. We may now doubtless expect soon to have the results of his personal observation of the agriculture on the Continent, to which brief reference is made in this reply to the compliment to his country and himself.

MR. JONAS WEBB'S BABRAHAM TUP SHOW.

The twenty-second annual letting of pure Southdown tups, the property of Mr. Jonas Webb, of Babraham, Cambs., took place, on Friday last, in a field adjoining the residence of the above-named gentleman. In the course of the morning there were apprehensions that the day would have proved a wet one; the rain at Babraham was but little, although in the neighborhood heavy showers, accompanied by a tempest, were experienced. About two o'clock the business commenced with considerable spirit. Mr. Martin Nockolds officiated for the first time as auctioneer, an office which has been filled, ever since the establishment of the letting, by Messrs. Smith and Son; the latter having retired from business, it became necessary to appoint a successor. Having been present at these annual lettings during the last twelve years, places us in a position to be able to give an opinion, as to the general merits of the show, somewhat approaching to accuracy. We have no hesitation whatever in pronouncing the present exhibition considerably in advance of any of its predecessors, in which opinion we are corroborated by a vast number of the most eminent and practical agriculturists and breeders in the kingdom. This, considering the position which Mr. Webb had already attained, might have been considered almost impossible. Many men would have concluded they had arrived at the highest attainable degree of perfection if similarly placed to Mr. Webb during the last twenty years; but it is this gentleman's firm conviction that to be stationary is virtually to retrograde, which prompts him to unremitting exertions, and thus perpetuates in the country specimens of its best breed of sheep.

The very best test, however, of the value of this flock may be found in the yearly increasing average prices attained for the rams submitted to competition. The highest priced tup was let for the season to Mr. Ayling, from Sussex, for 79 guineas. The entire number publicly let before dinner was sixty-seven; the gross amount realized was £1571, 17s., being an average of £23, 10s. per head! Particular attention should be paid to the average price of a large number, inasmuch as isolated instances of even higher prices than the maximum on Friday could be no evidence to rely on either as to the value or estimation of any particular breeders' stock. The most remarkable feature at the present show was the manifest improvement in the shearling tups. We particularly noticed three distinguished for their beauty of symmetry, quality of wool, and every qualification for a first-class animal. They let for the season at an average of sixty guineas each. Many others were hired at prices varying from thirty to forty-five guineas.

It were vain to attempt to give any thing like a list of the company present; amongst those present at the show or dinner we observed Lord Hardwicke, the Duke of Manchester, the agents of his grace the Duke of Beaufort, Lord Braybroke, Lord Walsingham, the Earl of Chichester, the Duke of Grafton, Lord Ducie, Lord Milton, Earl of Leicester, Earl of Burlington, Mr. Colman, the celebrated American agriculturist and author, and about two hundred agriculturists and breeders from every part of the kingdom, from bleak Northumberland to the sunny downs of Sussex.

After the letting, a party of about two hundred sat down to an excellent and substantial cold collation, under the presidency of the Earl of Hardwicke.

The CHAIRMAN gave, in rapid succession, "The Queen," three times three; "The Queen Dowager," ditto; "Prince Albert, Albert Prince of Wales, and the rest of the Royal Family," ditto.

The Duke of MANCHESTER proposed the health of the Lord Lieutenant of the county, the Earl of Hardwicke.

The CHAIRMAN next gave "The Bishop and Clergy of the Diocese of Ely."

The Rev. JOHN GRAHAM acknowledged the toast. The rev. gentleman said that it was now, more than at any previous period in their history, incumbent upon them to exert themselves to the utmost towards elevating the character and habits of the lower classes, by means of sound moral and religious teaching, and by the laity co-operating with the parochial clergy, who were ready to devote their energies, their talents, and, if need be, their lives, in furtherance of this great work.

The CHAIRMAN said it was but right to inform them that he had seated on his right and left two gentlemen from America—gentlemen who, though frequently called foreigners, had no right to be thus denominated. In drinking their healths, he hoped they would remember that they were a portion of that true Anglo-Saxon race, which was now diffusing itself throughout the world, and giving to the people of foreign states and nations an example of civil and religious freedom—of a sound constitutional movement—in a manner in which it ought to be presented. They had an opportunity on all the occasions of calling up those recollections associated with the fact of one of the greatest nations on the face of the earth (and which would one day be the greatest) having emanated from the loins of this country; America was of the same flesh and blood as themselves, and not only so, but the whole of their laws and institutions were taken substantially from those of England. (Hear, hear.) Similar were they in every respect—taken from them in every degree and form—the same trial by jury—the same principles of liberty, civil and religious, only governed by a President instead of a sovereign. Lord Hardwicke concluded by proposing the healths of Mr. Colman and Mr. Bassett.

Mr. COLMAN said he was delighted once more to attend this interesting annual meeting of the farmers of Cambridgeshire. He was glad to find that while he had been absent they had not thrown Jonah overboard (laughter); and allow him to tell them that, so far from such a preservation being prejudicial to the crew, it had been most essential to the interests of the whole ship's company. He was most happy to witness—to see the progress which Mr. Webb had made during the last four years; he (Mr. C.) thought perfection had been long ago attained; but the exhibition of that day had fully dissipated any such impression. He had lately returned from a long agricultural tour on the Continent, and it was to him as clear as the light of day that the farmers of England, in respect to the improvement of their stock, were not only a whole head, but a whole length before all other countries.

(Cheers.) Still there were two or three improvements which might be most advantageously adopted from abroad; one was with respect to the "soiling" of cattle. It was a well-established fact that oxen and beef cattle could be kept in as good condition which were constantly in the stable, and at less expense than those in pasture. It was also well established that cows afforded as much produce when constantly "soiled" as when allowed to range at large. But compare the results of the two practices, and observe the benefit which one produced on the farmer's manure heap. Another great improvement he should like to see carried out was the preservation of the liquid manure. (Hear, hear.) The best agricultural district he had passed through was Flanders, and the secret of all their success (and he could say it without disparagement, so transcendant were their excellences here) was in their urine system. It was impossible for farmers to overrate the advantages of preserving their liquid manure in urine cisterns, not to confine their practice to simply draining their muck-heaps. (Applause.) He got into a great difficulty at Northampton when talking about the importation of foreign corn from America; but like very many other difficulties, it grew out of a mutual misunderstanding. They thought he was talking of wheat, (and it was at a time when farmers had no skin at all, and touch them where he might they were sensitive,) instead of which he alluded to Indian corn. They imported a great many fat cattle from abroad, perhaps because they had not enough to feed them with of their own produce. Why not import Indian corn, or maize? There was no article which would make them so much beef, or repay them so well, as fattening cattle on Indian corn. By this they would see they would have the resource of the manure made, which would be so valuable. There was another subject he wished to mention his views on, which he had no doubt they would view as Utopian. He knew that at meetings of this description politics were excluded, and he was the last person to offend against any wholesome rule; he would, therefore, put the political view of the subject entirely out of sight. He believed that nothing would tend more to the benefit of the English farmer than the cultivation of beet-root for sugar. Mr. C. entered into a comparative statement as to the cost of beet-root in France and Flanders, and the beneficial results arising from its cultivation. In the latter country he found one farmer who had saved seven-twentieths of the value of the crop for feeding cattle. He (Mr. C.) saw him in June, with a large flock of sheep in his barn, and with a number of heads of cattle that even an Englishman would have envied. He was then feeding them with the remains of the beet-root manufactured in the preceding autumn, which had been kept uninjured from that period. He could hardly express his pleasure in being able to meet them in peace, after his recent tour through countries ruined and miserable by the whirlwind of revolution and anarchy. This state of things was especially favorable to agriculture; for if the soldier fought for all, and the parson prayed for all, it was the farmer who paid for all. (Applause.) God grant that it might be their happiness to enjoy uninterrupted peace; prosperity they could hardly dare look for; if they could preserve peace and order, and the country in security be content—but do not feel too confident, for Heaven knew what might happen—if they preserved a natural quiet when thrones were tottering around them, and the entire continent of Europe was shaken to its very centre; if they were saved from all the horrors of unmitigated anarchy which now afflicted a neighboring state, where the whole country was one immense fulminating volcano, so that they could not put their feet anywhere but it burst forth with almost uncontrollable violence; if they could ride at safety in their fast-anchored bark, even though contending with some difficulties

and hardships, until Heaven was pleased to grant them but a little of the blue sky of hope and security in the midst of this storm, they had much to congratulate themselves upon. (Cheers.) Soon would their hopes be animated and cheered, and their entire horizon be illumined with the full effulgence of a meridian sun, diffusing light and health and peace over the whole of this great and prosperous country. (Loud applause.)

Mr. Bassett also acknowledged the toast.

The Chairman expressed himself in terms of approbation, and fully concurred in the agricultural views taken by his American friends. In reference to growing beet-root, his lordship said that many of the farmers were under an impression they were living under a system of free trade, and yet they were not permitted to grow beet-root and tobacco. It was impossible for agriculturists to know to what extent to carry out improved systems of cultivation, interfered with and fettered as they were on all sides by acts of parliament. This was one of the miserable results of the new free-trade theory. If they had free trade, let them grow what they liked and sell what they liked, and not stop them when they attempted to cultivate tobacco or beet-root. But as this might be construed into a departure from the rule forbidding politics if he went any further, he should abstain; he only mentioned it to show the difficulty of the position in which they were placed. The noble lord here gave the health of Mr. Ayling, of Sussex, the hirer of the highest priced tup.

The Chairman proposed the health of Mrs. Adeane and family, the representative of the late esteemed owner of the soil. This toast was succeeded by the toast of the health of their host, Mr. Jonas Webb, and success to the Babraham flock. Before dinner, Mr. Webb had parted with sixty-seven sheep, which had realized £1571, 17s., or £23, 10s. per head average. The noble lord proved that this must inevitably be a great public benefit rather than, as was sometimes said, a good "bagging" for Mr. Webb. He would ask any hirer to trace the benefits which the hiring of Mr. Webb's sheep produced on their own flocks, and to calculate the increased amount which their lambs had realized since the introduction of this particular breed.

Mr. Jonas Webb most heartily thanked them for the compliment paid him. Be assured it was a question most interesting to him to see so many celebrated agriculturists present from all parts of the kingdom. He felt quite overpowered by the liberality and attention bestowed upon him, and that when he ought to say the most he was only to say the least. It was a very great satisfaction to him to find that the hirer of the highest-priced tup came from the county of Sussex, where he originally obtained the breed from. It was most gratifying to him to know that they were only taking back what he originally had from them. The Chairman had said, gentlemen had remarked that his sheep had realized him very high prices. He did not complain; he had obtained good prices, and he hoped they were taking back their own stock with interest on the present occasion. They might rest assured he should never relax his exertions in the cultivation of this stock so long as he met with the support he had always experienced during twenty-two years—every letting having brought him more money than the preceding one. With respect to the approaching meeting of the Royal Agricultural Society at York, he had but one wish—that the owners of the best stock and the best implements might obtain the prizes. (Hear, hear.)

Mr. Witt, Denney Abbey, proposed, in eulogistic terms, the health of their noble Chairman.

The Chairman acknowledged the compliment paid him, and said he felt fully persuaded it would never have been paid him had they not been con-

vinced his conduct, though occasionally differing from their views, had been honest and straightforward. The lamentable circumstances abroad might all be attributed to a want of mutual dependence; and the miserable condition of France at that moment resulted from the spoliation and indiscriminate diffusion of property, and the absence of the great mainstay of a nation—wealth. With regard to free trade, he believed the best course they could pursue was to quietly allow the theory to be worked out; of the result he had no doubt whatever. There yet existed a remnant of the corn-laws, and he entreated the company to look upon this subject with reference to their revenue. In the face of an increasing duty there had been a falling price. He would say, endeavor to hold fast the present portion of duty, since it produced a considerable sum for revenue, while it inflicted no injury on the consumer.

Several other toasts were drunk, which our space compels us to abridge. Mr. Hicks proposed "The Strangers present," coupling it with the name of Mr. Rigden, from Sussex; and Mr. Rigden, in acknowledging the toast, said he regularly hired of Mr. Webb, and found it paid him a very good interest; he should certainly have gone higher for the best ram let to-day, but from a belief that the party bidding against him had a much longer purse than he had. The above were followed by "The Magistrates of the County of Cambridge:" "The Royal Agricultural Society;" "Mr. Wood, and our friends from Nottinghamshire;" "Success to Agriculture;" "Health of Mrs. Webb and family, and Mr. Webb, sen." The Chairman left at half-past eight.

AREA AND POPULATION OF THE VARIOUS STATES OF EUROPE.

STATES OF EUROPE.	Geographical Square Miles.	Inhabitants at the end of 1846.	Per Centage of the whole Area in Europe.	Per Centage of the whole Population in Europe.	Average Inhabitants on One geographical square mile.
German Confederation . . .	11,477-67	41,672,375	6·35	15·88	3,631
Austria (except the part belonging to the Confederation)	8,509-09	24,828,079	4·71	9·52	2,918
Prussia (exclusive of ditto) . .	1,714-56	3,863,822	0·95	1·49	2,253
Russia (as far as the Ural and Caucasus)	99,489-41	64,865,000	55·06	24·87	652
France	9,616-90	35,050,000	5·32	13·44	3,555
Great Britain and Ireland . .	5,754-91	27,905,000	3·19	10·70	4,643
Netherlands	546-30	2,829,035	0·30	1·09	5,178
Belgium	535-91	4,335,319	0·29	1·67	8,089
Denmark (with Schleswig) .	846-40	1,729,976	0·47	0.67	2,044
Sweden and Norway	8,004-76	3,338,504	4·43	1·28	417
Switzerland	752-00	2,411,608	0·40	0·93	3,008
Portugal	1,659-37	3,260,693	0·92	1·25	1,965.
Spain	8,446-90	13,077,997	4·68	5·02	1,548
Italy	4,787-00	19,070,869	2·65	7·32	3,984
British Possessions in the Mediterranean Sea	54-95	357,010	0·03	0·14	6,497
Greece	652-69	957,003	0·36	0·37	1,466
Turkey	12,210-10	9,949,226	6·76	3·82	815
Montenegro	60-00	111,280	0·03	0·04	1,855
Total	180,689-92	260,866,694	100·00	100·00	1,444

INCREASE OF PIG POPULATION.

THE following table will show the rapid increase of the pig. Supposing the first litter to be when it is twelve months old, and that it has a litter every six months; and that it has an average of six pigs every litter. The sows to be kept in a breeding state till three years old, and then fatted off. Average 4 cwt. when killed, and all the hogs to be fatted off by the time they are twelve months old, and average 2 cwt. when killed.

Date of Increase and Sale.	Breeding Sows.	Increase of Stock.		Stock Sold.		Weight of Fat Bacon in cwts.
		For Breeding.	For Fatting.	1 year old Hogs, 2 cwt. each.	3 years old Sows, 4 cwt. each.	
End of	1	3	3			
1801	1	3	3			
	4	12	12	3	. .	6
1802	7	21	21	3		
Old sow deducted	1	. .	. .	. .	1	10
	6					
	18	54	54	12	. .	24
1803	39	117	117	21		42
Old sows deducted	3	. .	. .	. .	3	120
	36					
1804	90	270	270	54		
Old sows deducted	3	. .	. .	. .	3	246
	87					
	204	612	612	117		
Old sows deducted	12	. .	. .	. .	12	588
	192					
1805	462	1386	1386	270		
Old sows deducted	21	. .	. .	. .	21	1308
	441					
	1053	3159	3159	612		
Old sows deducted	54	. .	. .	. .	54	2988
	999					
1806	2385	7155	7155	1386		
Old sows deducted	117	. .	. .	. .	117	6786
	2268					
	5247	16,281	16,281	3159		
Old sows deducted	270	. .	. .	. .	270	15,390
	5157					
1807	12,312	36,936	36,936	7156		
		66,009	66,009	12,792	480	27,508

At the end of 1807 then there would be of breeding Pigs

612 2½ years old.
1386 2 years old.
3159 1½ year old.
7155 1 year old.
16,281 ½ year old.
36,936 sucking pigs.

65,509
53,217

118,746 in all, besides the sale of 27,508 cwts. of bacon; and beside—16,281 hogs, half year old, and 36,236 sucking hogs.

AGRICULTURAL EDUCATION:

ADVOCATED BY AGRICULTURAL CLUBS IN ENGLAND—WHY NOT IN THIS COUNTRY?—CHANNING ON THE PREVENTION OF MOBS.

At a late meeting of the Harleston Farmers' Club, the subject of "Agricultural education" was introduced by Mr. R. B. Harvey, when the following resolution was carried unanimously.

"*Harleston Farmers' Club.*—At a meeting of the Harleston Farmers' Club held at the Magpie Inn, on the 14th inst., present—Messrs. Mechi, Theobold Gower, Woodward, Nunn, and a very crowded company of agriculturists, the subject of 'Agricultural Education' was introduced by Mr. R. B. Harvey, when the following resolution was carried unanimously:—'It is the opinion of this meeting that an improvement in the system of agricultural education generally, is of the utmost importance. It believes that a better understanding of the principles of the tenure and management of land is required by the owners of the soil; that with the improvements in science which the last few years have effected, a knowledge of those connected with agriculture will be indispensable on the part of the rising generation of the occupiers of land; and above all, that the more knowledge a laboring man possesses the happier he will be and the more skilful and handy he becomes. With these views it recommends to every one connected with the soil, and to the members of this club especially, that they should promote by all the means in their power an improvement in the system of Agricultural Education.'"

Why is it that American Farmers' Clubs and Societies seem to be afraid to touch such subjects? Do they not know that the best and surest and widest place into which to sow the seeds of every improvement is in the minds of the rising generation, and that the more education is made to bear on the profession of agriculture, as well as on the profession of law, or medicine, or arms, the more efficiently that profession may be practised? Yet the only one for which the farmer and the planter are taxed is to maintain schools for teaching the *science of war!* the very science that has its origin in, and essentially belongs to, *a state of barbarism.* It is not that one would have the government turn school-keeper, or editor, as it does in undertaking to publish an annual on Agriculture from the Patent Office, (made up of statistics cut out of price currents, interspersed with rigmarole letters about feeding hogs, and random guesses at next year's produce and prices,) but that we would have the Representatives of the landed interest in Congress demand as much for each State, to be, by the States, expended in the diffusion of *agricultural sciences*, as they now vote, to be paid by farmers and planters, expressly for the maintenance of *military schools!*

The *highest* duty of every government is to provide for the *education of the people*, (which is the same thing as providing for virtue and productive capacity,) and in proportion as agriculture supplies the wealth and feeds the population of the country, so ought the provision which government should make for education to be applied to the art of agriculture. If education is neglected, the time will come in our country when poverty and ignorance will rise, as in Europe, under a vague sense of wrong, against all that is valuable and sacred in society.

Read what the amiable and accomplished Channing said on this subject.

"*What is Taught by Popular Tumults.*—I grieve when I hear men referring to the next legislature, as if some stronger laws were all that we need for our security. Let us have these laws; but unless accompanied by wise, patient, generous effort for the reformation and advancement of the ignorant and exposed classes of the community, they will avail little. Our mobs, though they have spoken in confused and discordant yells, have uttered one truth plainly—and this truth is, that there exists among us—what ought to exist in no Christian country—a mass of gross ignorance and vice. They teach one plain lesson to the religious, virtuous, philanthropic, educated, refined, and opulent; and that is, that these have a great work to do, the work of enlightening and lifting up a large portion of their fellow creatures and their neighbors; that they have no right to spend their lives in accumulating wealth or in selfish indulgences, but that they are to labor, to expend time,

thought, wealth, as their circumstances may permit, for the intellectual, moral, spiritual life of a multitude around them buried in darkness, prejudice, sensuality, excess, and crime. This is the great lesson to be learned from mobs. If we heed not this; if we look for safety to penal laws, rather than to the performance of personal duty, the disinterested labors of Christian love, and the faithful use of the best means of purifying and elevating society, we shall have none to blame but ourselves if society become the prey of violence and insurrection."

Another way to prevent mobs, and the best way, after that of an improved education, is to adopt and cherish such a line of policy on the part of the government as will draw the loom and the anvil around the plough. For every country, *concentration* around a thousand centres is better than centralization in one place. Where men are collected by hundreds of thousands, there will be overgrown fortunes, and great squalidness, and poverty, and corruption, and violence. Let us foster the system that will build up villages around water-powers, that every farming district may have its customers close at hand, to get what he wants to buy, and to sell what he wants to dispose of in exchange for what he wants to buy. Then all parties will save the time and the expense of transportation, and then we should have no combinations nor mobs. Then we should have economy in the management of the government, and then we should always have peace.

MARYLAND AGRICULTURAL CONVENTION.

A FEW WORDS TO THE MEMBERS OF THE STATE AGRICULTURAL SOCIETY.

May it not be hoped that results will be ultimately realized from the late convention, as connected with the progress and character of Maryland agriculture, both intellectually and practically, so decided and profitable as to make it hereafter a matter of some interest to have the means of tracing these results to their origin and their authors? In some faint expectation that such may be the case, the official account of the proceedings of the convention shall be transferred from the pages of *The American Farmer* to those of *The Plough, the Loom, and the Anvil*—if not in the present, in some early subsequent number, for preservation and reference—and why "faint expectation," says the sanguine and confident young reader? Alas! if we must say it, because the sad recollection overcomes us, that such conventions have been held and such societies incorporated, (and some still exist,) not only in Maryland, but all the way from the Coosawhatchie to Cape Cod, and yet the question arises, after the lapse of half a century that some of these societies have existed, what great enduring improvements in the agricultural productions and condition of these States are clearly traceable to these societies which would not without them have been realized? Nay, where are the evidences of any such improvements in the state and circumstances of the soil and the cultivators of the soil from the Chesapeake to the Mississippi?

Look at the state of agriculture in old Virginia, and the number of apparently auspicious efforts at amelioration like this, which have been made in that State, so blessed, even to profusion, with all that nature could do to render a people numerous and powerful, polished and conspicuous, for all the glorious fruits that spring from high social, political, and industrial development! Recall to mind the number of her "conventions" and the number of her agricultural societies, and the great names that have figured in their organization? Yet is there any general advancement in the agricultural wealth and prospects of the Old Dominion corresponding with the general march of the arts in other pursuits, and in any degree proportionate to her incalculable advantages in soil, climate, and natural resources? Is her average acreable produce, in corn, wheat, oats, rye, peas, beans, potatoes, barley, or tobacco, more

than it was fifty years ago? Are her sons under the perpetual influence of a centripetal or a centrifugal force? Are the sons and daughters of neighboring farmers clustering on and around their birth-places, marrying and being given in marriage to each other, as soon as their inclinations would draw them, and their virtues entitle them to come together? Is the area of cultivation in the aggregate rapidly increasing or being contracted? Is the whole state, in a word, becoming more populous, more wealthy, and more refined? for these are the invariable signs and concomitants of a prosperous agriculture, or, alas! are not her sons moving off, and her fair daughters—renowned over the world for making the best of housewives—neat in their persons, affable in their manners, intelligent, spirited, benevolent and thrifty; are they not left around their mothers, when they ought all to be mothers themselves? And have our agricultural societies—numerous and longlived as they have been in the Carolinas and Maryland—prevented the same state of things from taking place in these States, no less favored of Providence? On the contrary, has there not been general decline instead of general improvement—dispersion instead of concentration, (leaving out the large towns,) and the happy effects, social and political, that concentration always begets *under wise laws?* and this brings us to the problem—one which it is most respectfully suggested it behooves you to probe to the bottom—*why is this?* Is it not because farmers and farmers' societies have begun with their cares and inquiries at the wrong end? Is it not that they have given too large a proportion of these cares and inquiries to the *practice*, and too *little* to the *political economy* of agriculture? for, permit us respectfully to suggest, that agriculture, if societies would but see it, depends for its prosperity, and is subject to decline, from political influences, just as much as manufactures and commerce are; rising and sinking, as these influences—that is the legislation of the country—happen to be favorable or mischievous; and if they would bring about general improvement, if they would see old houses repaired, and new ones built; and the rich lands ditched and drained, instead of still further exhausting those that are worn out—if, in a word, they would brighten up the whole face of the country, they must betake themselves to studying the *political economy of the plough!* They must think *less* about *how* to fatten bullocks and *how* to make a bushel more on an acre of corn, or wheat, or potatoes or turnips, and *more* about how consumers—the hatter, the shoemaker, the tailor and the smith, the ironmonger and the coal-heaver, and the schoolmaster, are to be provided in our own country—to buy, as in Connecticut and Massachusetts, pay for, and consume, the bullock and the corn, wheat, potatoes and turnips. Let them go into Massachusetts, where the people have the sagacity to draw, against the very laws of nature, the iron from other States to their anvils, the wool of other States to their looms, and the leather of other States to their lapstones; and there see how lands are selling by the foot, many miles out from Boston; there, and only there, where you find the loom and the anvil by the side of the plough, and where consumers bear a large proportion to producers, will you ever see three hundred varieties of pears, grapes as large as pig-nuts, and more than one thousand cut-glass plates and dishes, with a countless variety of magnificent fruit displayed at a single exhibition! Among such a people so concentrated only will you see, as we have lately done, teams of only two yoke of oxen, hauling in the common way, about the town of Lawrence, wagon loads of Pennsylvania anthracite coal, and loads of iron, weighing more than twelve thousand pounds! Yes, my worthy friends, if you would open deep and enduring springs of progressive improvement for Maryland husbandry, you must go to the bottom, instead of beginning at the top of existing difficulties. If you proceed in the same old way that societies have been doing for the

last fifty years—content with only offering premiums for bushels of this and quarts of that—deterioration and dispersion will continue as they have done all the while. You must act on the legislation of the country by concerted influence—you must force yourselves to be heard and respected—you must insist that our colonial vassalage to England shall be utterly broken up—that we shall be independent of her in fact, as well as in name, and that a policy shall be established that will leave undisturbed the natural tendency of men to combine for mutual interests, and that attraction which everywhere exists between the plough, the loom and the anvil—an attraction from which ensues every blessing that combination of power, mental and physical, can secure. If you go on putting your exclusive reliance on mere expedients, on offering silver goblets and paper diplomas, to have repeated again what has been accomplished a thousand times, and what every one knows can be accomplished again, your sons will continue from necessity to desert their homes and go to drag out their existence among strangers; and if you do not go yourselves, your daughters will continue at home to read romances and dream of a thousand things they can never realize. To undertake to remove agricultural stagnation, by offering ten dollar cups alone, (well enough and even commendable and useful in their way,) may be fitly compared to the conduct of him who should attempt to restore life to a dying tree by sprinkling its branches with whale oil soap, when sapped by the ravages of worms gnawing at its root; or to that of a miller who should undertake to stop a leak in his dam by throwing dirt *on the outside!*

With these very hasty thoughts, hastily expressed in a steamboat on the river approaching New Haven, and in the midst of much noise and confusion, we shall send back the proceedings of the convention to the printer, fervently hoping that in its results, now and for years to come, all the most sanguine hopes, the most sanguine can entertain from the formation of a State society, may be realized. Proposing to be among you at the Fair on the 9th, to brighten with old friends the chain of our ancient regards, and, what is not quite so easy, at our time of life, to make many new ones, we bid you adieu—*au revoir.* The convention, like the society, was formed of men of the finest spirit and the highest degree of intelligence. Reader, run your eye over the names, and say if it be possible that want of practical knowledge is the cause that agriculture does not go ahead in counties where such men reside? What then is needed? Want of concentration and variety of employment. How are these to be effected? Not by sending our wool to be wove and our cotton to be wove in foreign looms—not by importing the coal that is dug and the iron that is manufactured in other countries by men who eat the bread of other countries.

One word more—unite with Mr. Colt, an eminent citizen of New Jersey, who last winter in vain petitioned Congress to appropriate for each State 64,000 acres of the public lands for the purpose of agricultural education under State authority. Since the public domain, acquired by the blood and treasure of the old States, is to become a prey to squatters from every region of the globe, becoming themselves in turn the prey of land-jobbers and speculators, why not thus secure some of it, while yet we may, for the most noble and praiseworthy use that can be made of property of any kind? If, as General Jessup said, no doubt truly, he could discipline the whole militia of the United States in sixty days, why might not, in like manner, the agricultural labor of the country be directed with equally increased efficiency, by means of men educated in a knowledge of the sciences that essentially belong to practical agriculture? Here then are objects worthy of your deepest contemplation and most determined efforts. But let the demand be first created at home, and all the rest will follow—and without that, the rest is

all "but leather or prunella." In the emphatic words of an address which has just fallen under our notice, allow us to conclude this hasty but friendly warning. "When a people, by protecting their own industry, become independent of all the world, then, and not till then, can they be said, under Providence, to control their own destinies, and to take rank with the first in the great family of nations."

We have been so apprehensive, judging from what we have seen of their proceedings, that agricultural societies have relied too exclusively on the influence of premiums for fat things and large animals, and heavy crops on single acres, as the great if not the only means within their reach of insuring progress in agricultural improvement; and have so sensibly felt the obligation to warn them of the necessity of taking a deeper and more comprehensive view of the subject, that we begin now to fear that we may have laid ourselves liable to the suspicion of being altogether opposed to such exhibitions as have been held in some States for the last thirty years at least. Now, on the contrary, we heartily approve of them, but not so much as a means to the great end in view, as to demonstrate the practical and profitable result of measures more efficacious and thorough. What we lament is, that farmers should thus come together in great numbers, and thus separate again and again, without any interchange of thought and reflection, upon the manner in which they and their interests and substance are made subservient to other classes, and without any attempt at devising the means of producing that concentration of population and diversity of labor among themselves, which draws the loom and the anvil near to the plough, and ensures within the smoke of the farmer's chimney settlements for his children, and markets for his produce, such as we have seen lately in New England, where a small stream of only five miles in length, greatly inferior to many of the mountain trout streams of Virginia, drives no less than eleven factories. We have been more than chagrined—we have been disgusted at seeing the tameness with which farmers, and those who represent them in societies and in Congress, submit even without daring to complain, to the payment of seventy-five per cent. of their taxes for military establishments and military instruction, without appearing to have the knowledge or the virtue to demand something for instruction, (not in the mere statistics which may be had from the journals of the day,) but in the *principles* of their own profession. No, so far from objecting to an agricultural exhibition *per se*, we cordially agree with a friend in New England—than whom we do not know a more enlightened promoter of agricultural improvement by all the most elevated means of realizing the best results. The extract we give from his letter embraces in the smallest compass the whole argument, and is at once condensed and conclusive. Still we would maintain that there is no guarantee for general and progressive improvement in the art of agriculture, worthy of a great and a free people, short of ***provision for teaching the elements of agriculture to the rising generation of the country in the schools of the country***—and that with every other social and political blessing will follow, when the nation has realized the independence of which it boasts so much; by a national above-board determination to carry out the declaration of Mr. Jefferson to Mr. Austin, that now we must have the manufacturer to set himself down by the side of the agriculturist. Then will come concentration instead of dispersion, and then will come the means of making roads and building school-houses, and of realizing all the improvements that spring from concentration, wealth and power.

As it is, our government pursues a policy which ***scatters*** our people over 20,000,000 of square miles of territory, making roads indispensable, and then denies itself the power and refuses to make roads. Let farmers think of all

these things, let them understand the economy—the *law* of the case—and then they will enforce, in the policy of the government, the *best of all* systems of premiums—one which will pervade the whole country, one which will be everywhere operating night and day, and endure as long as the nation shall entertain a clear sense of the true interests—not of a party but of *the people!* Says our esteemed correspondent:

"If I should venture to take any exceptions to the two works in question, it would be to an occasional dash of cold water ejected from the editorial fountain upon agricultural societies, or rather upon the manner of awarding premiums and the objects of the same. Undoubtedly these societies, as all human institutions, have their deficiencies and defects, but they are not therefore to be detracted from, for the benefits conferred by them. If I understand you aright, you are of opinion that no further premiums should be offered for large crops, for fat cattle, or for extra stock of any kind, as the mode of producing them is well known, and all can produce them if they will. Granting this, (which I would grant only for the argument,) I would submit to you whether the exhibition of such stock, and the statement of the material facts respecting such crops, are not calculated to produce, and do produce, a wonderful stimulus upon the agricultural mind to attempt similar results? If that mind is already informed, its will and energy are by these associations roused to action—if it be not informed, it is put on the track of information and excited to inform itself. Suppose that you discourage these societies—stop their annual meetings—close the doors of their exhibition halls—strike their cattle-pens and stop their ploughs, what will you substitute in place of them to meet what now seems to be an agricultural demand all over the country? Books and journals treating of farming are good, excellent, indispensable, in their place. But you well know how small a proportion of even the most intelligent parts of the agricultural community are reading men—how much more accessible are they to the real substance itself for the production of lively impressions, than to the mere description of it on paper—and that till such impressions are produced, books to them are sealed books. Now, as I conceive, these societies do accomplish great good—and they have evils incident to them too—in rousing the dormant faculties to exertion and whetting the mind's appetite to seek for further and more solid food from the higher order of agricultural journals. Am I not right in this view of the subject, and are not we and you co-operators together in the greatest, best, most healthful and delightful of all earthly pursuits? If Great Britain is to be taken as a model in agricultural affairs, we can still point to her numerous agricultural societies and shows, which have prospered with renewed and renewing vigor, as her agricultural periodicals have increased in number and ability—and so may it be, and I doubt not will be, here. Go on then with your work—speed "the plough, the loom, and the anvil," but I pray you discourage not the exhibitions of practical husbandry.

"Yours in the best of bonds. J. W. D."

THE COMING AGRICULTURAL EXHIBITION AT BALTIMORE.

We have not left ourselves room for the record of the proceedings of the convention and the official account of the organization of the Maryland State Agricultural Society, but as the outline has been already given and the event has passed, the particulars, for mere record, may as well appear hereafter—not so however the coming exhibition, which we hope to witness in all its variety of agricultural and mechanical excellence. We can only find room for the following, from the "American Farmer," for October.

"We are authorized in saying, that about thirty head of the noble herd of Devons, of George Patterson, Esq., will be here—and no one who feels an interest in the subject will begrudge a ride of a thousand miles for a sight of them. The superiority of the Devons for oxen is well established, and the farmer will behold, in the specimens here presented, the perfection of the breed. This country cannot produce any thing of the kind to equal Mr. Patterson's herd, and we doubt if its superior is to be found in Europe. Mr. Patterson is also expected to exhibit some of his blooded horses, which we have heard spoken of in the highest terms. Colonel Capron, and Mr. Calvert, of Prince George's, will also be here, with their Durhams, Devons, Holsteins, &c.; each of these gentlemen will have an equal number, at least, with Mr. Patterson, from their fine herds, and we think we are not out of the way in saying, that they can favorably compare with the herds

of any State in the Union, either in the number or character of their stock of these breeds. There are a great number of other gentlemen who will be present with their cattle, and though their herds are not so numerous as those to which we have alluded, yet there will be found many animals of a very superior order—Mr. McHenry's Ayrshires, that beautiful and favorite milking breed, will be here, as we suppose will those of John Ridgely, Esq., of Hampton, and General Howard, Colonel Ware, Mr. Clement and Mr. Reybold, and we suppose Governor Stevens, Colonel Lloyd, Colonel Bowie, and others, will be in attendance with their different breeds of sheep, Colonel Capron with his splendid mules; and we should be gratified to learn that the Messrs. Hambleton, of Talbot, will exhibit those fine animals which carried off the prize at the last Talbot Fair. Let every one who has any thing of superior excellence to exhibit be with us on the occasion. We have no doubt that from our neighboring States of Pennsylvania, Delaware, and Virginia, we shall have a number of animals. We invite all to come—a welcome is extended to them, and the field, it will be seen, is opened for competition to the whole country.

"*Implements.*—This part of the exhibition will also be of great interest—not only our own manufacturers, who are hard to beat, will be prepared to make a handsome display, but we learn that many from the Eastern States, as well as our neighbors of Pennsylvania and Delaware, will be here. No farmer should fail to be a witness of the trials for pre-eminence, which will take place in this department. It will be superior to any thing of the kind presented in the Eastern cities. Every description of implement will be here exhibited, and the farmer will be enabled to judge at a glance of the merits of the various machinery which will be presented for his inspection."

This department of implements is the one which in our judgment deserves to be regarded as of the very highest importance. It lies at the foundation of all improvement, and if the farmer would compel Congress to give only a tenth part as much for improvement of labor-saving machines by the application of steam and otherwise, as it now appropriates for military surveys and books and for labor-saving machinery for man-killing, who can begin to anticipate the results that would follow.

One word more. Have railroads and steamboats decided to take free of charge to and fro whatever is going bonâ fide to the exhibition? Even their own pecuniary interests, well understood, should prompt them to do so.

WOOL.

PRICES OF WOOL—PROSPECTS FOR THE WOOL-GROWER—LETTERS FROM S. LAWRENCE OF LOWELL.

It would be worse than affectation to say that we do not feel flattered by the following testimony to the value of our labors in endeavoring to demonstrate to the farmer and the planter, the wheat-grower and the wool-grower, the cotton-grower and the corn-grower, how essentially and particularly the question of encouragement to all the branches of domestic industry is a question *interesting to them.*

According to the common notion of the influence of self-interest on the actions and opinions of men, a notion in the main well founded, the manufacturer of wool is the last person to whom the growers of wool should apply for candid advice in his business—but there are men whose views are more elevated and extended, and who have the sagacity to see that interests apparently and at first sight antagonistical, are really identical, when looked at philosophically and their true political economy is thoroughly understood. It is in this understanding of the case, and in a knowledge of character gained by much business intercourse, that both wool-growers and cotton-growers, and those who propose to embark in the manufacture of these articles, apply from all quarters with equal confidence to Mr. Lawrence of Lowell for his opinions and advice; well assured that they will be given with equal politeness and candor.

Though well persuaded that every thing from him will command the attention of the wool-grower, we cannot forbear to invite the regards of every political inquirer after the real economy of agriculture, to the striking fact he states as to the vast difference in the amount of capital invested in this case, in the machinery for the *production* compared with that which is necessary for the *conversion* of wool: and on that simple aspect of the question which is applicable in so many cases, let us inquire whether it be not unreasonable, nay monstrous, to enact a policy or tariff, under which the produce of the great machine of production should be transported and sent all the way to Manchester and back, rather

than compel the Manchester weaver to come with his light machinery to the great machine of production, here to eat the corn, and potatoes, and veal, and pork, and beef, and mutton, for all which he is compelled to give enormous prices in Manchester to the benefit of the *foreign* agriculturist? Will our people suffer themselves for ever to be caught and led by the nose—and at last ridden bare-back by demagogues as the gaucho catches with his lazo and subdues for life the free courser of the Prairies?

COL. SKINNER.

Lowell, October 3, 1848.

My dear Sir:—I cheerfully comply with your request, and hand you copies of the letters you read when here a few days since. The best remedy I can think of for the evils under which the country is suffering is that *every man, woman, and child in the United States, shall take a copy of your admirable paper*, "THE PLOUGH, LOOM, AND ANVIL," read it carefully, and practise on the doctrines laid down therein.

I remain, your friend truly,

SAM. LAWRENCE.

MR. SAMUEL LAWRENCE.

Moore's Salt-works, Jefferson County, Ohio.

Dear Sir:—I hope it will not be offensive to you in finding one addressing you with whom you have no acquaintance. I desire some information in reference to the wool market, and can think of no person at present whose opinions would be entitled to more consideration than yours; I mean not only the present value but the prospective value some years to come. In 1840 I purchased one hundred native ewes; with these and their progeny I have bred from the best merino bucks I could procure—my present stock is, say, twelve hundred; a few of the original stock are still living; taking my whole lot together it is tolerably nice wool—last year it brought twenty-nine cents, cash; this year I sold it at twenty-seven and a half. But the purchaser could not raise the cash, and I did not choose to let him have it. ——— of Steubenville offered twenty-six cash; I declined taking it. It is understood that you are not purchasing any wool this season; what does this mean? Will the article advance this winter? The Washington county wool is all on hand and cannot be got without advanced prices. Is the supply too large for the demand? If so, will not the market sink still lower every subsequent year—would it be advisable to abandon the business at once? I will be pleased to have your views at large on the subject. If wool is destined to range with this year's prices, I can do much better with my lands than pasturing sheep. But I lack foresight. I feel discouraged in the business. I have heard men say they could raise wool at twenty-five cents. Those believing this may do so. I cannot and will not.

Yours truly, R. G.

R. G., Esq., Moore's Salt-works, Jefferson county, Ohio.

Lowell, September 26, 1848.

My dear Sir:—Your highly valued favor of the 16th is at hand, and I beg to assure you that I have much pleasure in replying to your queries, and in giving you such information relating to the great branches of national industry in which we are both engaged as is in my power. The reasons for the gr at depression in the woollen manufacture of this country are obvious. A short crop of food in 1846, in Great Britain, caused a famine in 1847, and a greater commercial crisis than has been for fifty years on the other side of the water. This caused a very large exportation of manufactured goods to this country, as they could not be consumed at home. Then came the last winter and spring, the political and financial troubles on the

Continent, with similar effects on consumption and exports to this country. For the last eighteen months this country has been *inundated with foreign fabrics, not one-quarter of which were needed for comfort or luxury.* The quantity of French and German broadcloths sold in New York the present year is perfectly enormous, and would amaze the wool-growers were they possessed of the facts. These goods have been sold generally at great sacrifices, which fell on the creditors of the makers and shippers, who had become bankrupt. Our own manufacturers have suffered severely by the great fall of goods, prices of which were never so low as at this time. Our own stock of goods was so large that we stopped a portion of our works, and discharged over a thousand hands.

This kind of thing cures itself, and my belief is firm that another year will show a greatly improved state of things. Whether wool will advance in price the coming winter or not, is beyond my judgment; but I have no doubt it will be higher within a year. The supply of domestic wool is not above the machinery. The clip of 1847 was entirely worked up. Do not for one moment entertain the idea of abandoning the business; instead of which make preparations to go on increasing. All the old and new machinery will be in full operation within one year. It would be about as wise for us to send our horses to Europe to be shod, as to depend upon importations of our woollen goods. It depends upon the wool-growers of this country how far the business of fabricating shall be carried; give us the wool at German prices and we shall soon supply ourselves.

The woollen manufacturer is in a relative position to the wool-grower as the miller is to the wheat-grower. The amount invested in sheep farms and sheep in this country is *more than four hundred millions of dollars*, while not over one-twelfth of that amount is the cost of woollen-mills, machinery, &c. It therefore rests with those representing these hundreds of millions of dollars to decide how far their interests shall be extended. Strike the woollen interest out of existence in this country, and what would be the value of the lands for the production of food?

The producers of food in this country obtain a foreign market only in seasons of famine, and I ask you if it is safe for so great an interest to depend for their prosperity on the frowns of Heaven? Would it not be wiser to make a market at home, and calculate how much food there is in the hundreds of thousands of tons of iron now imported yearly, which could as well be made here. Our government is the cheapest and best in existence, and we have the elements of prosperity beyond that of any nation of which there is a record. Let us all aim to make our beloved country glorious.

Believe me, your obedient servant, SAM. LAWRENCE.

Lowell, September 28, 1848.

R. R. R., Esq., Washington, Pa.

My dear Sir:—Since Bishop Campbell assumed the guardianship of the fine wool interest of this country, I have looked on as an amateur. You are aware that for a great many years previous I gave that branch special attention. If the Bishop has not informed you it was his duty to do so, that the French government and Belgian also are allowing high bounties on the exportation of their manufactured woollens; and all goods made of wool from those countries are imported in this way, say, an article costs in Havre—

	100 dollars.
Bounty	12
	88,00
Duty 30 per cent.	26,40
	114,40

Should be cast 100 dollars.
Duty 30
130

I believe the bounty is 13½ per cent., but am not sure. The woollen manufacturer is to the wool-grower precisely in the same relative position as the miller is to the wheat-grower. In sheep and sheep-farms in this country four hundred millions of dollars are invested. In woollen-mills and machinery thirty millions. Who is to look into this matter? [The wool-grower or the manufacturer?] Our form of government is the cheapest and best in existence, but its policy is far more unnatural than that of the ostrich. The prosperity of our glorious country depends quite as much upon the success of the wool and woollen interest as upon any other great branch of national industry. Let this interest droop and the whole country would feel it. Our food producers think a great deal of exporting to Europe, which only happens in times of short crops. Let them rather calculate how much food is consumed in the manufacture of a yard of broadcloth in our own country, carrying the whole thing out in its various ramifications! I would make any reasonable sacrifice to sit down with you and some others and discuss this thing. Something must be done to put the country on the right basis. There is a jealousy in many parts of the country against manufacturers; their influence is comparatively nothing. The agriculturists control the country and should do. This is right; only pray move, and with energy, for the paternal care of *American* industry.

I remain, your friend and obedient servant, SAM. LAWRENCE.

THE PHILADELPHIA AGRICULTURAL SOCIETY'S EXHIBITION,

WE rejoice to hear, went off admirably. An engagement contracted some time back, when we were not aware of the time their exhibition would take place, deprived us of the pleasure of being present, and compelled us to go to Middletown, Connecticut, to deliver the discourse which makes the first article in this number.

How often we wished some of our observing southern friends had been with us lately at cattle-shows in New England! Ah! they are a wonderful people! —real propellers! What would you think of seeing, as we did, some fifteen hundred men come in at the end of a little ride of forty-five miles, to old Worcester at 9 A.M., to go *to hum* that night, travelling the ninety miles in about three hours, and all for less than a cent a mile! Every man well dressed, good cloth seeming to be as common as the commonest things in nature. What is more, you do not see any great men among them! all seem to be on a footing. No great lawyers and great stump-speakers, and rich nabobs driving four-in-hand, that stand out in bold relief for the groundlings to stare at. And then the way they build up banks, and factories, and railroads, and the way that population, and demand, and high prices, make the food, and the fruit, the hay, the potatoes, apples, pears, plums, and grapes come out of the ground, is a caution! Why? The regular farmer there picks up every apple and every Indian walnut, and every shell-bark, assured of customers to buy —one pays for his shoes with dried apples, and another his postage with pig-nuts. Nothing is wasted that could be honestly converted into money or—manure. None are ashamed to work, but all are ashamed to beg. What think you of a savings' bank of some hundred thousand dollars in little Middletown! And the way they *do* make shoes, and planes, and pitch-forks, and rakes, nail kegs and axe handles, for their kind friends in the south! But we only took up pen to fill a space, and the printer says we'll overrun the mark!

INSECTS.

A LOVER of natural history cannot, I think, be a bad man, as the very study of it tends to promote a calmness and serenity of mind favorable to the reception of grateful and holy thoughts of the great and beneficent Parent of the universe. He cannot be a cruel man, because he will be unwilling wantonly to destroy even an insect when he perceives how exquisitely it is contrived, and how beautifully adapted for the station it is destined to fill in the animal world. Few things have afforded me greater pleasure than watching the wonderful instinct which induces insects to watch over and protect their offspring. An instance of this occurred in the case of a sand-wasp. I observed this animal fly backwards and forwards very frequently from the side of a window to a gravel walk near it. After some time I perceived that she collected the finest particles of sand from the walk, with which, under a projection of the window, she formed a cell. When the cell was completed, she flew to a neighboring bush, from whence she selected a little green caterpillar, which with some difficulty she contrived to force into the cell. Having next deposited an egg on the caterpillar, she covered over the top of the cell with a sort of paste made of fine sand, sloping it so that no rain could rest upon it. In this manner four different cells were completed. After a lapse of some time the young wasps emancipated themselves and disappeared. There seems no reason to doubt but that the caterpillars which were so curiously introduced into the cells served not only to protect the young brood from too much heat or cold, which they would have been subjected to had they merely been deposited at the bottom of an empty cell, but also for food, till they were capable of extricating themselves from their state of confinement.

Blumenbach, in his Elements of Natural History, states that an insect of the *sphex* genus will dig a hole in sandy ground, drag a large spider, or the caterpillar of a *phalæna*, into it—lame it by biting off its legs —and then lay an egg in each hole; so that the larva may suck out the spinning fluid of the animal which the mother has buried, and in that way prepare itself a habitation in which to pass through its metamorphosis.

The following remarks by the same naturalist may interest those who have not access to his works.

"It has been calculated that the abdomen of the female white ant, when about to lay her eggs, is two thousand times larger than previous to impregnation. She can lay eighty thousand eggs within twenty-four hours. Insects which undergo metamorphosis are called larvæ, whilst in the state in which they escape from the egg. They are mostly very small on their first appearance, so that a full-grown caterpillar, of the willow-moth for instance, is seventy-two thousand times heavier than when it issues from the egg. On the other hand, they grow with great rapidity, so that the maggot of the meat-fly, at the end of twenty-four hours, is one hundred and fifty-five times heavier than at its birth.

"The carrion-beetle (*vespilio*) scents from a distance the bodies of small animals, as moles, frogs, &c., and buries them underground for the purpose of depositing its eggs. Six of them will bury a mole a foot deep in less than four hours.

"The eyes of insects are of two kinds; the first are large hemispheres, mostly composed of thousands of facets, but in some instances of numerous conical points, and covered on the inner surface with a layer sometimes glittering, sometimes variegated. Those of the second kind are simple, small, and vary as well in number as position. Eyes of the first kind seem calculated for seeing at a distance—of the second for looking at near objects. Only a few insects can move their eyes.

"The *antennæ* are organs of feeling, which are of great importance to insects, on account of their hard, insensible covering, and the immobility of their eyes. They appear to possess their most acute feeling in the antennæ, as man has in the tips of his fingers; and as for the most part they live in darkness, supply the want of light by this contrivance.

"The eggs of some insects are covered with a kind of varnish, to protect them from the destructive influence of rain and other accidents."

It would, however, be an endless task if I were to enter into all the wonders of the insect creation. Latreille eloquently says, "that the wisdom of the Creator never appears to excite our admiration more than in the structure of the most minute beings which seem to conceal themselves from observation; and Almighty Power is never more strikingly exhibited than in the concentration of organs in such an atom. In giving life to this atom, and constructing, in dimensions so minute, so many organs susceptible of different sensations, my admiration of the Supreme Intelligence is much more heightened than by the contemplation of the structure of the most gigantic animals."

SWANS, PIGEONS, AND EMUS.

——— the swan with arched neck
Between her white wings mantling proudly, rows
Her state with oary feet.—MILTON.

LIVING on the banks of the Thames, I have often been pleased with seeing the care taken of the young swans by the parent birds. Where the stream is strong, the old swan will sink herself sufficiently low to bring her back on a level with the water, when the cygnets will get upon it, and in this manner are conveyed to the other side of the river, or into stiller water. Each family of swans on the river has its own district; and if the limits of that district are encroached upon by other swans, a vindication of local rights immediately takes place, and the intruders are driven away. Except in this instance, colonies of swans appear to live in a state of the most perfect harmony. The male is very attentive to the female, assists in making the nest, and when a sudden rise of the river takes place, joins her with great assiduity in raising the nest sufficiently high to prevent the eggs being chilled by the action of the water, though sometimes its rise is so rapid, that the whole nest is washed away and destroyed.

The following instance of attachment in these birds has recently come under my observation. A pair of swans had been inseparable companions for three years, during which time they had reared three broods of cygnets; last autumn the male was killed, and since that time the female has separated herself from all society with her own species; and though at the time I am writing (the end of March) the breeding season for swans is far advanced, she remains in the same state of seclusion, resisting the addresses of a male swan who has been making advances towards forming an acquaintance with her, either driving him away, or flying from him whenever he comes near her. How long she will continue in this state of widowhood I know not, but at present it is quite evident that she has not forgotten her former partner.

This reminds me of a circumstance which lately happened at Chalk Farm, near Hampton. A man, set to watch a field of peas which had been much preyed upon by pigeons, shot an old cock pigeon which had long been an inhabitant of the farm. His mate, around whom he had for many a year cooed, whom he had nourished from his own crop, and had assisted in rearing numerous young ones, immediately settled on the ground by his side, and showed her grief in the most expressive manner. The laborer took up the dead bird and tied it to a short stake, thinking that it would frighten away the other depredators. In this situation, however, the widow did not forsake her deceased husband, but continued, day after day, walking slowly round the stick. The kind-hearted wife of the bailiff of the farm at last heard of the circumstance, and immediately went to afford what relief she could to the poor bird. She told me that, on arriving at the spot, she found the hen bird much exhausted, and that she had made a circular beaten track around the dead pigeon, making now and then a little spring towards him. On the removal of the dead bird, the hen returned to the dovecote.

The only instance I have met with in which the hen bird has not the chief care in hatching and bringing up the young, is in the case of the emus at the farm belonging to the Zoological Society, near Kingston. A pair of these birds have now five healthy young ones. The female, at different times, dropped nine eggs in various places in the pen in which she was confined. These were collected in one place by the male, who rolled them along gently and carefully with his beak. He then sat upon them himself, and continued to do so with the utmost assiduity for nine weeks, during which time the female never took his place, nor was he ever observed to leave the nest. When the young were hatched, he alone took charge of them, and has continued to do so ever since, the female not appearing to notice them in any way. On reading this anecdote, many persons would suppose that the female emu was not possessed of that natural affection for its young which other birds have. In order to rescue it from this supposition, I will mention that a female emu belonging to the Duke of Devonshire, at Chiswick, lately laid some eggs, and as there was no male bird, she collected them together herself and sat upon them.

Nepotism Extraordinary.—The late Miles Lester, Esq., of Upton, Gainsborough, England, who died a short time ago, has left *sixty* of his nephews and nieces £300 each.

In a lecture at the Manchester Mechanics' Institute, Mr. F. Warren said, "the first cotton cloth was made in Derby, in 1773, by Messrs. Meed and Strutt, and it was then prohibited by law from being sold in the market."

THE TOAD.

I REMEMBER some years ago getting up into a mulberry-tree, and finding in the fork of the two main branches a large toad almost embedded in the bark of the tree, which had grown over it so much that he was quite unable to extricate himself, and would probably in time be completely covered over with the bark. Indeed, there seems to be no reason why, as the tree increased in size, the toad should not in process of time become embedded in it, as was the case with the end of an oak-rail that had been inserted into an elm-tree, which stood close to a public footpath. This, being broken off and grown over, was, on the tree being felled and sawn in two, found nearly in the centre of it. The two circumstances together may explain the curious fact of toads having been found alive in the middle of trees, by showing that the bark having once covered them, the process of growth in the tree would annually convey the animal nearer to the centre of it, as happened with the piece of oak-rail; and also that toads, and probably other amphibia, can exist on the absorption of fluids by the skin alone. This is confirmed by the following fact. A gentleman put a toad into a small flower-pot, and secured it so that no insect could penetrate into it, and then buried it in the ground at a sufficient depth to protect it from the influence of frost. At the end of twenty years he took it up, and found the toad increased in size, and apparently healthy. Dr. Townson, in his tracts on the respiration of the amphibia, proves, I think satisfactorily, from actual experiment, that, while those animals with whose economy we are best acquainted, receive their principal supply of liquids by the mouth, the frog and salamander tribes take in theirs through the skin alone; all the aqueous particles being absorbed by the skin, and all they reject being transpired through it. He found that a frog, when placed on blotting-paper well soaked with water, absorbed nearly its own weight of the fluid in the short time of an hour and a half; and it is believed that they never discharge it, except when they are disturbed or pursued, and then only to lighten their bodies, and facilitate their escape. That the moisture thus imbibed is sufficient to enable some of the amphibia to exist without any other food, cannot, I think, be reasonably doubted; and if this is admitted, the circumstance of toads being found alive in the centre of trees is fully accounted for. In one of the volumes published by the Academy of Sciences at Paris, there is an account of a live toad being in the centre of an elm-tree, and of another in an oak. Both trees were sound and thriving.

In additional proof, however, of what has been advanced, I may mention that the respectable proprietor of some extensive coal-mines in Staffordshire informed me that his men, in working into a stratum of thick coal, at a very considerable depth, found what they called three live eels in a small deposit of water in the centre of a block of coal, which died as soon as they were taken out of it. As this assertion may astonish the geologists, I think it right to mention that my informant did not see the eels himself; but his workmen, one would think, could have no object in deceiving him in a matter of this sort. The men called them eels, but they might possibly be the genus of amphibia living in dark caverns, the Proteus, of which Sir Humphrey Davy has given an account in his "Consolations in Travel." I am not aware of any communication with the external world by which eels could reach the place where they were said to have been found. The men in question made an affidavit of the fact before a magistrate. I was also informed by a most respectable clergyman and magistrate in that neighborhood, that two colliers came before him and requested to make an affidavit of their having discovered, in a large block of coal about sixty yards below the surface of the earth, a snake or adder, which was found alive on breaking the piece of coal. These men wished to make the affidavit because the truth of their assertion had been doubted. I should add that the Staffordshire colliers are a trustworthy race of men, and not given to fiction.

Another case was mentioned to me by an eminent physician. A wet spot had always been observed on a freestone mantelpiece, which afterwards cracked at that place, and upon its being taken down, a toad was found in it, dead; but its death was probably owing to the want of that moisture which it had been enabled to imbibe when the stone was in the quarry, and which gradually lessened by the action of the fire, as from the moisture which appeared on that part of the mantelpiece, some time after it was put up, there seems but little reason to doubt that the toad was alive at that time.

There is also a well-authenticated account in the Annual Register, of a toad being found in the middle of a large and hard stone, which had no visible aperture by which it could get there.

Blumenbach, in his Elements of Natural

History, says that it is indisputable that living toads have been found in sawing through blocks of stone, trees, &c.

I may here mention a curious circumstance in regard to some frogs that had fallen down a small area which gave light to one of the windows of my house; the top of which being on a level with the ground, was covered over with some iron bars, through which the frogs fell. During dry and warm weather, when they could not absorb much moisture, I observed them to appear almost torpid; but when it rained they became impatient of their confinement, and endeavored to make their escape, which they did in the following manner. The wall of the area was about five feet in height, and plastered and whitewashed as smooth as the ceiling of a room. Upon this surface the frogs soon found that their claws would render them little or no assistance; they therefore contracted their large feet so as to make a hollow in the centre, and by means of the moisture which they had imbibed in consequence of the rain, they contrived to produce a vacuum, so that by the pressure of the air on the extended feet, (in the same way that we see boys take up a stone by means of a piece of wet leather fastened to a string,) they ascended the wall, and made their escape. This circumstance occurred frequently.

It is a curious fact, that toads are so numerous in the island of Jersey, that they have become a term of reproach to its inhabitants, the word "Crapaud" being frequently applied to them; while in the neighboring island of Guernsey, not a toad is to be found, though they have frequently been imported. Indeed, certain other islands have always been privileged in this respect. Ireland is free from venemous animals, of course by the aid of St. Patrick! In olden times, the same was affirmed of Crete, the birthplace of Jupiter. The Isle of Man is said also to be free from venemous creatures. The Mauritius, and I believe one of the Balearic islands, enjoy the same immunity.

CLING TO THOSE WHO CLING TO YOU.

Cling to those who cling to you;
More than half our sorrow's made
When we are ourselves untrue
To the light of friendship's aid.
But how sweet it is to own
Some kind heart to thine beat true,
After many years have flown!—
Cling to those who cling to you.

Cling to those who cling to you;
Think how those who live apart,
That sweet solace never knew
Friendship sheds around the heart.
Who is there that hath not longed
Once to find some friend prove true?
That *your* friendships be prolonged—
Cling to those who cling to you.

Cling to those who cling to you
Every link of friendship's chain,
If the heart be only true,
Will for ever bright remain.
Never be the first to break
In the chain the link that's true;
Never trust and truth forsake—
Cling to those who cling to you.

J. E. Carpenter.

HOME AND FRIENDS.

Oh there's a power to make each hour
As sweet as Heaven design'd it!
Nor need we roam to bring it home,
Though few there be that find it!
We seek too high for things close by,
And lose what nature found us;
For life hath here no charms so dear
As home and friends around us!

We oft destroy the present joy
For future hopes—and praise them;
Whilst flowers as sweet bloom at our feet,
If we'd but stoop to raise them;
For things afar still sweetest are
When youth's bright spell hath bound us;
But soon we're taught that earth hath naught
Like home and friends around us!

The friends that speed in time of need,
When hope's last reed is shaken,
To show us still, that come what will,
We are not quite forsaken;
Though all were night, if but the light
From friendship's altar crown'd us,
'Twould prove the bliss of earth was this—
Our home and friends around us!

THE WHOLE DUTY OF WOMAN.

REFLECTION.

As the way of a man who walketh, yet knoweth not whither he is going, so is the discourse of one who weigheth not his words.

As the chattering daw that prateth without understanding; as the young magpie with its double tongue talketh by rote; as the monkey jabbers; as the green parrot squalls without ceasing, so is a woman who regardeth not her speech.

Before thou openest thy lips to speak, reflect whether thou knowest the truth of what thou art about to say, or understandest the matter thereof.

Else thou mayest be detected in a falsehood, and thy assertions may be an impeachment to thy understanding.

So shall the stranger, and the acquaintance repeat thy words to thy disadvantage; the sincere will despise thee, and the wiser than thou laugh thy folly to scorn.

Let thy promises be few, and such as thou canst perform, lest thou art reduced to break thy word, and it be hereafter reckoned of no account.

Be not less circumspect over thy actions; for the sayings of thy mouth may be forgotten; but the work of thine hands will make a deeper impression, and may be lasting causes of remorse.

Consider what thou art about to do, before thou beginnest thy work: lest thou labor in vain, and the fruit of thy endeavors turn to no end.

Weigh thy strength and thy design; lest thou faint under thy burden, and fall short of the recompense of thy toil.

Wouldst thou attempt to reach up to the moon, the nurse would laugh and the young child hold thee in derision; yet as well mayest thou undertake a work thou canst not perform.

Examine also the price of thy labor, the consequence of thy deeds, lest, when thou hast finished thy task, thou art dissatisfied with thy wages.

For the consequence of precipitancy is repentance at leisure.

The price of folly is reproach, and the wages of sin is death.

VANITY.

Thou art fair as the snow-drop of the spring, the rose of June blows on thy damask cheek, thine eye outsparkles the blue lustre of the sapphire, thou art stately as the tall fir-tree, and thy presence is commanding as majesty itself.

The east and the west pour forth their treasures to deck thee; the sea and land give up the pearl and the precious stone; thy array is the finest silk; the diamond is a star on thy bosom, and the ruby and emerald are interwoven with the hair on thy temples.

Therefore vanity hath lifted thee up, thou flutterest on the wings of thine own conceit, thou despisest even the ground where the vulgar tread, thy chariot is drawn by white horses, and thy feet are hardly conscious of their own burden.

O deluded woman! the butterfly and the gaudy tulip are emblems of thy fancied importance.

They are decked in the pride of summer, they enjoy the sunshine awhile, but shortly fade and attract the eye no more.

Is thy breath perfume? is thy taste rich? the particolored carnation and the speckled rose are sweet, and the juice of the ripe grape as delicious as thy taste.

But the rude hand of the spoiler cometh, both in the opening of the bud and at the fulness of the bloom, and the untimely frost turns sour the rich flavor of the vine.

So misfortune may crop thy imaginary greatness in the bud of thy joys, or in the full bloom of thy splendor; and the clay-cold hand of disease convert thy exquisite taste to undistinguishing bitterness.

Doth gold pamper thee with dainties, doth the smiling aspect of full-fed plenty delight thee;

Be not exalted beyond measure, for thou knowest not how soon they may forsake thee: when starving poverty shall provide scraps for thy table, and meagre want, with famine on her hollow cheek, shall stare thee in the face.

Art thou quick of invention, is thy mind stored with the talents of wit and understanding, doth the power of elocution sit on thy tongue, do thy periods flow like honey from thy lips: be not vain-glorious of these, nor boast them in thy possession.

For the fool will take a pleasure to peck at thee; thy words will be sifted, and thy speeches examined with the nicest severity.

The malicious and the ignorant will catch at the opening of thy mouth; neither shall the justest of thy sayings escape their criticism.

Nay, they will condemn thee unheard, yea, censure when thou speakest not.

If thou sayest thou wilt act wisely and eschew evil, and the frailties of human nature should overcome thee to do ill, they will then point at thee and cry out, *This is*

the wise woman who buildeth her house on a rock, who is sagacious to do good; let us profit by her example, let us take pattern by her wondrous wisdom.

Avoid, therefore, vain-glory and self-conceit; for she who lifteth herself up will others take a pride to pull down; and, if the day of calamity should come, her fall will be their triumph and their rejoicing.

But the humble shall be honored in prosperity; they shall find favor in adversity; and compassion shall invite them to her home, in the day of trouble and distress.

KNOWLEDGE.

Who is she that travelleth from the farthest parts of the earth, who crosseth the mighty waters, to find out the ways of the children of men?

Who changeth her habitation daily, who dwelleth in the fields and in the populous cities, beneath the straw-crowned cottage, and the golden roofs of the king's palaces?

Fatigue hath wrinkled her forehead, her head is silvered over with age; yet she walketh upright, for experience is her support and her strength.

Her name is Knowledge: she is the daughter of Inquiry, and the mother of many children.

For pleasure, and profit, and experience, and sorrow, and pain, are the fruit of her womb.

Wouldst thou, O fair one, be the guest of her house, be satisfied with what her table affordeth.

For Pleasure standeth at the door and inviteth thee with smiles, and Profit spreadeth the best on the board: but if thou desirest what she hideth from thee, and pryest into the secrets of her closet, Experience will embitter thy drink, and Sorrow, like a churl, make thy cheer and thy welcome naught.

It is not for thee, O woman, to undergo the perils of the deep, to dig in the hollow mines of the earth, to trace the dark springs of science, or to number the thick stars of the heavens.

Let the kingdom rule itself; let the wise men and the counsellors enact laws, and correct them; the policy of government is a hidden thing, like a well of water in the bottom of a deep pit.

Thy kingdom is thine own house, and thy government the care of thy family.

Let the laws of thy condition be thy study, and learn only to govern thyself and thy dependents.

REPUTATION.

Brighter than polished silver, more valuable than *Peruvian* ore, more precious than the pearl in the sea, than the diamond in the bowels of the earth, or all the shining treasures of the mines of *Potosi*, is reputation to a woman.

As the time that is past is gone for ever; as the word that escapeth thy lips returneth not again, so is the good name of a woman, when it goeth from her.

Art thou beautiful as the morning, art thou comely as the evening, do strangers speak thy praise, and thy acquaintance pour their encomiums on thee; yet thy way is a narrow path, from which, if thou strayest, thou wilt never more find it out, thy praises will be turned into revilings, and thy encomiums into keen reproach.

Art thou placed on an eminence among the daughters of women, dost thou sit at the head of the board, do crowds of admirers bow down before thee with reverence; yet thou sittest on a slender pinnacle, from which the sudden breath of indiscretion, or the strong blast of envy, may cast thee down; so shall thy fall be that of a falling meteor; thou shalt be despised in the dust, and gazed at on high no more.

Wouldst thou preserve this jewel of an high price; let not the boaster, nor the professed betrayer, come near thy house.

Be not frequent in the walks, nor in the thronged parts of the city, nor in the high places of the theatre.

Let not thy foot often leap at the sound of music, lest in thy dancing days thy reputation forsake thee.

Encourage not a train of admirers, lest their envy and jealousy of each other cast an odium on thy conduct.

As the way of a man on the ridge of an house, so is the fame of a woman among a crowd of fools; but the coquette is light of heart, and danceth along; no wonder, therefore, she falleth.

Yet affect not to despise temptation; for the prude loseth her good name by the means she taketh to preserve it.

As a man on the brow of a precipice trembleth at the depth below, and fearing to fall, his head swimmeth, and he is gone; so is a woman who boasteth her reputation.

Keep the appearance of evil at a distance; for the show of a crime may be as fatal to thy reputation as the reality of a transgression.

Sport not with thy good name, nor run it heedlessly into danger; for the consciousness of thine own innocence will not protect thee from reproach.